

MAORI FORTIFICATIONS OF THE OKATO DISTRICT, TARANAKI

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Abstract. Twenty-seven pre-European Maori fortifications are described from the Okato district, Taranaki, North Island, New Zealand. Many of the sites have ring-ditch defences and show marked similarities to forms in previously surveyed districts to the north. Changes in natural topography towards the south-west margin of the survey area, however, have resulted in a change from ring-ditch forms to fortifications in which artificial defences cut off sections of natural terrace, or in three cases, lahar mounds, which are backed up against coastal or river scarps.

This paper concludes the description of pre-European Maori fortifications of the region between New Plymouth and Stoney River (Hangatahua) in Taranaki, North Island, New Zealand. A background to the programme and the reasons for undertaking the research have already been published along with the results of first year's field work in the Omata and Oakura districts (Prickett 1980). The second season's field work, in the Tataraimaka district, has also been published (Prickett 1982). The present paper reports sites which were surveyed in the third field season in the Okato district between Katikara River and the right bank of Stoney River. There remains the overall analysis of results to be completed and published at a later date.

A general description of the programme area has already been given. Topographically the Okato district consists of extensive terraces cut by the steep-sided valleys of rivers and streams. Two of the major rivers, the Katikara and Kaihihi, have their origins on the western flank of the Pouakai Range. To the south, the larger Stoney River rises in the Ahukawakawa Swamp which occupies an extensive valley between the Pouakai Range and Mt Egmont. Smaller streams drain limited areas seaward of the main South Road. The terrace country itself dips north-west to the coast. Towards the mouth of Stoney River the terrace country is generally lower than elsewhere. Over most of the survey area the landscape is thickly mantled with ash. On the right bank of Kaihihi River this changes to a landscape dominated by lahars of the Pungarehu Formation and, to the right bank of Stoney River, to Warea Formation laharic conglomerate and the alluvial sand and gravel of the Hangatahua Gravels (Neall 1979).

Maori fortifications of the Okato district are rarely more than 5 km from the sea. The twenty-seven recorded pa include the historically important Mounu Kahawai. Ngaweka (N108/80), on the left bank of Hangatahua, perhaps the most important pa in what is generally regarded as the Okato district, is not included here as this survey extends only to the right (north) bank of the river. The survey area falls within the traditional territory of the Nga Mahanga *hapu* of the Taranaki tribe.

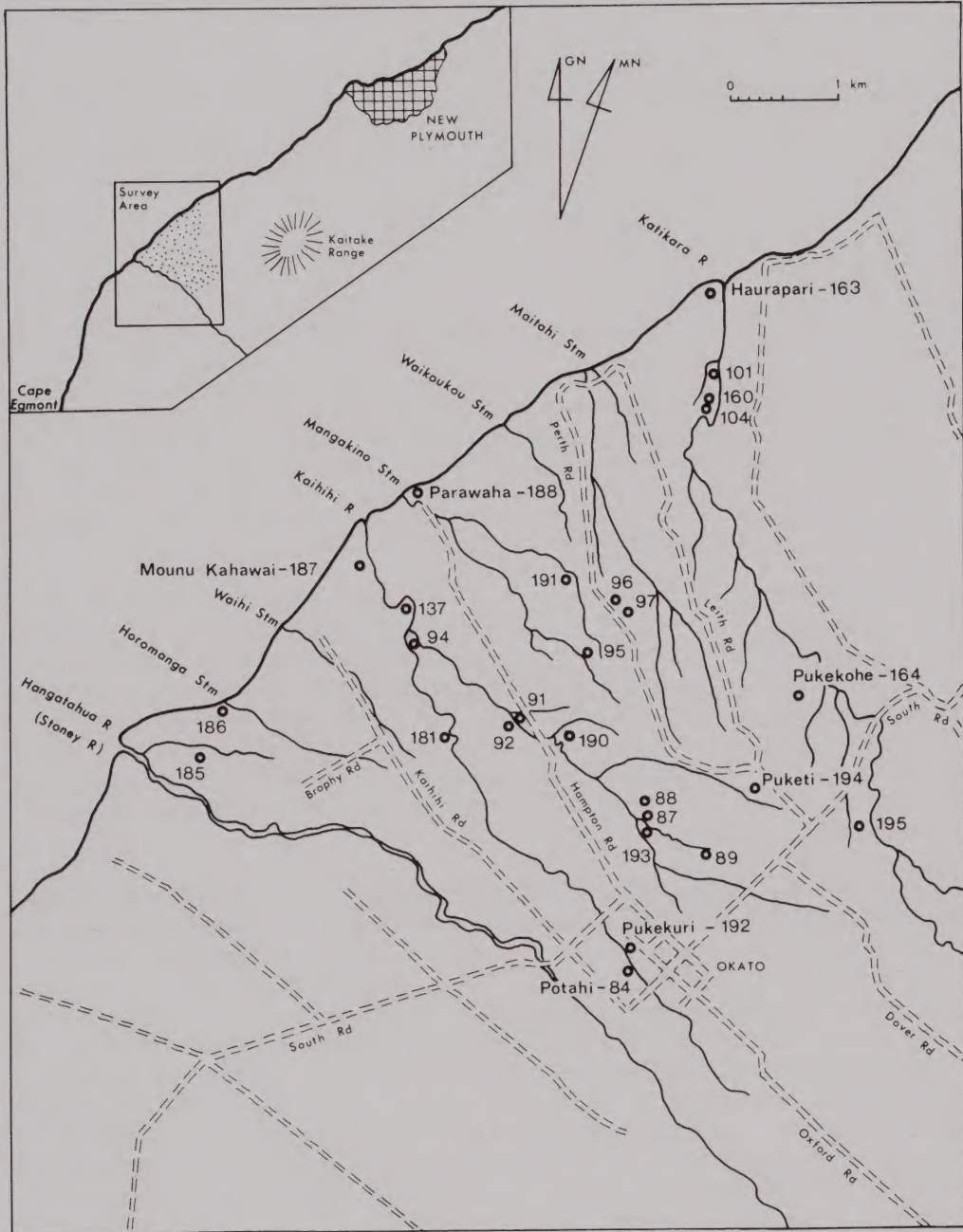
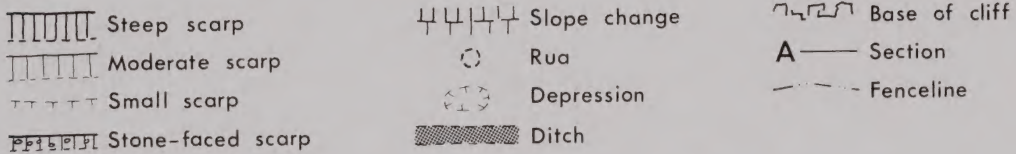


Fig. 1. Distribution of pa in the Okato district, Taranaki.



Key for Figs. 2, 4, 5, 7, 8, 10, 13, 15, 16, 18, 19, 21-25, 27.

This paper reports the results of three weeks work by one field team in November and December 1981. Most sites were mapped by alidade and plane table. Others were surveyed by tape and compass and 'dumpy' level as topography and vegetation cover required.

The survey area falls within the NZMS 1 series map N108 (New Plymouth). Map references are from the third edition, 1970. Site numbers refer to the New Zealand Archaeological Association site recording scheme. Except where stated, names ascribed to pa were obtained from the original Lands and Survey Department blocksheets covering the Cape Survey District, which are now held in the Lands and Survey Department district office, New Plymouth. The 1950 aerial photographs referred to are from the New Zealand Aerial Mapping Ltd (Hastings) series, which are held by the Lands and Survey Department.

The distribution of pa within the surveyed area is shown in Fig. 1. Presentation of individual sites is organised geographically by stream or river catchment areas working in general from east to west through the district.

N108/195 (487766) Fig. 2

N108/195 is one of the rare pa located inland of the present main road in the Tataraimaka and Okato districts. More than 5 km from the sea, it is the furthest inland of 15 fortified sites within the Katikara River valley. It is 1 km south of the major pa Pukeporoporo, across the river (see Prickett 1982:36-38). N108/195 occupies a narrow ridge between terrace country north and south. The rectangular earthwork can be seen beneath gorse in the 1950 aerial photograph (1791/9), but with a farm access track already making use of the ditch and bank along the north-east side. The site has since been substantially destroyed. The transverse ditches at both ends are gone and the western half

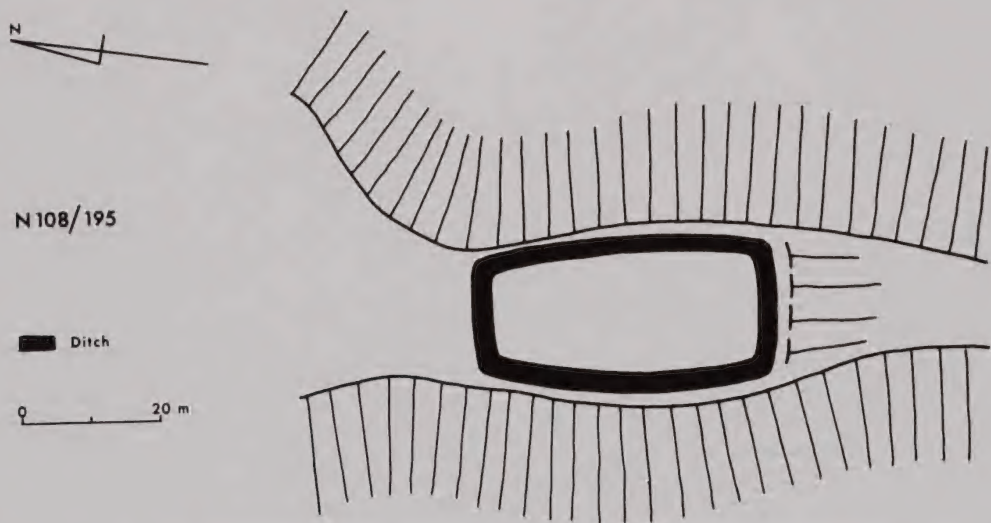


Fig. 2. Reconstruction of defences of N108/195.

of the platform is cut down 2 m to ease access along the narrow ridge. All that survives is the ditch along the south-west flank with its 4 m platform scarp and lower outer bank. The site is now under grass with some small native trees on the surviving platform scarp.

Natural defences include steep 12-15 m scarps into adjacent gullies on both sides. The site stands higher than the terrace country to the north, while to the south-east, higher ground is 80 m away. Artificial defences involved a single encircling ring-ditch.

The destroyed living platform of this pa measured 40 x 18.5 m, giving an area of *ca.* 700 m².

Pukekohe N108/164 (481778) Figs. 3, 4

Pukekohe occupies the top of a prominent hill standing high above the Katikara River valley, 500 m west of Pukeporoporo. The hill was formerly topped by the trig 'Langley', 106 m (348 ft) above sea level. Despite its elevated position, however, Pukekohe does not enjoy good command over nearby ground which is deeply dissected by tributaries of the Katikara River. The site is very badly damaged: the outer defensive bank is virtually destroyed and the clump of pine trees which now occupies the inner platform has very badly damaged what remains. It is now under pine trees and grass.



Fig. 3. Pukekohe (N108/164) — view west over Katikara River (1980) from Pukeporoporo (N108/90; see Prickett 1982:36-38).

N108/164
Pukekohe

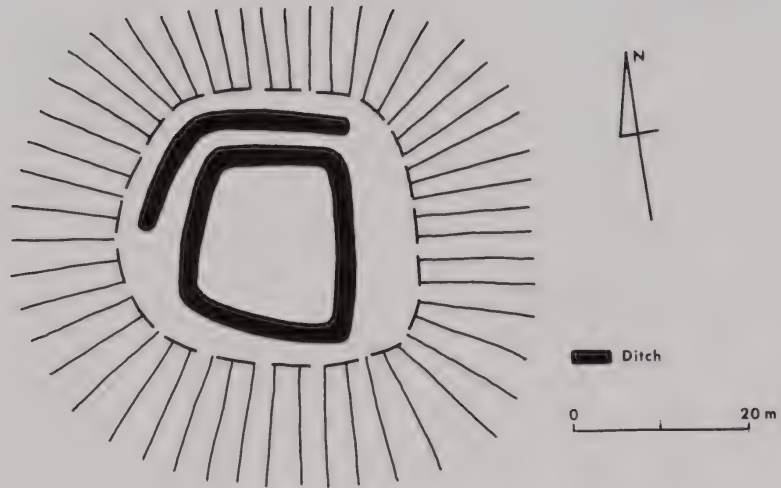


Fig. 4. Reconstruction of defences of Pukekohe (N108/164).

Natural defences consist of steep 40-50 m hillsides into adjacent gullies except to the south-west from where there is a relatively easy approach 20 m up from a slight saddle. In the 1950 aerial photograph (1790/6) Pukekohe can be seen as a square work defended by an encircling ditch and bank, with a second ditch enclosing the north-west and north-east sides. This form can be confirmed on the ground today despite damage suffered by the site.

The occupation platform now measures 19 x 17.5 m: allowing for erosion from the margins the defended area may have been 320 m². There is no sign remaining of internal organisation.

N108/104 (472807) Figs. 5, 6

N108/104 lies within a dense concentration of fortification sites in the lower Katikara River valley. Over the river to the south are N108/103, N108/102 and Pouteau (these sites are described, along with others on the right bank of the river, in Prickett 1982). To the west over the river are N108/161 and 162. On the left bank of the river (and introduced in the present article) are N108/160 and 101. The massive earthwork of N108/163 is at the mouth of the river 1 km away. Two hundred metres north-west of N108/104 is Porou (N108/105), a Taranaki, Ngati Ruanui and Whanganui fortification of the Second Taranaki War, which was taken by the 57th Regiment in the Katikara River engagement of 4 June 1863 (see Cowan 1922 I:219-221). N108/104 is now under pasture with some pine trees along the south-west margin. Some damage has been done in the past along both sides in the preparation of access to the valley bottom.

The present fortification occupies a powerful position bounded by a 30 m cliff to the Katikara River on the south-west side, with steep escarpments to the valley floor to the east. Only the north offers an easy approach from the extensive terrace country of the left bank of the Katikara River, on the very edge of which the pa is situated. Artificial defence consists of a single encircling ditch with an outer bank which, before damaged, would have extended from cliff top to terrace edge around the south-east and north-east sides.

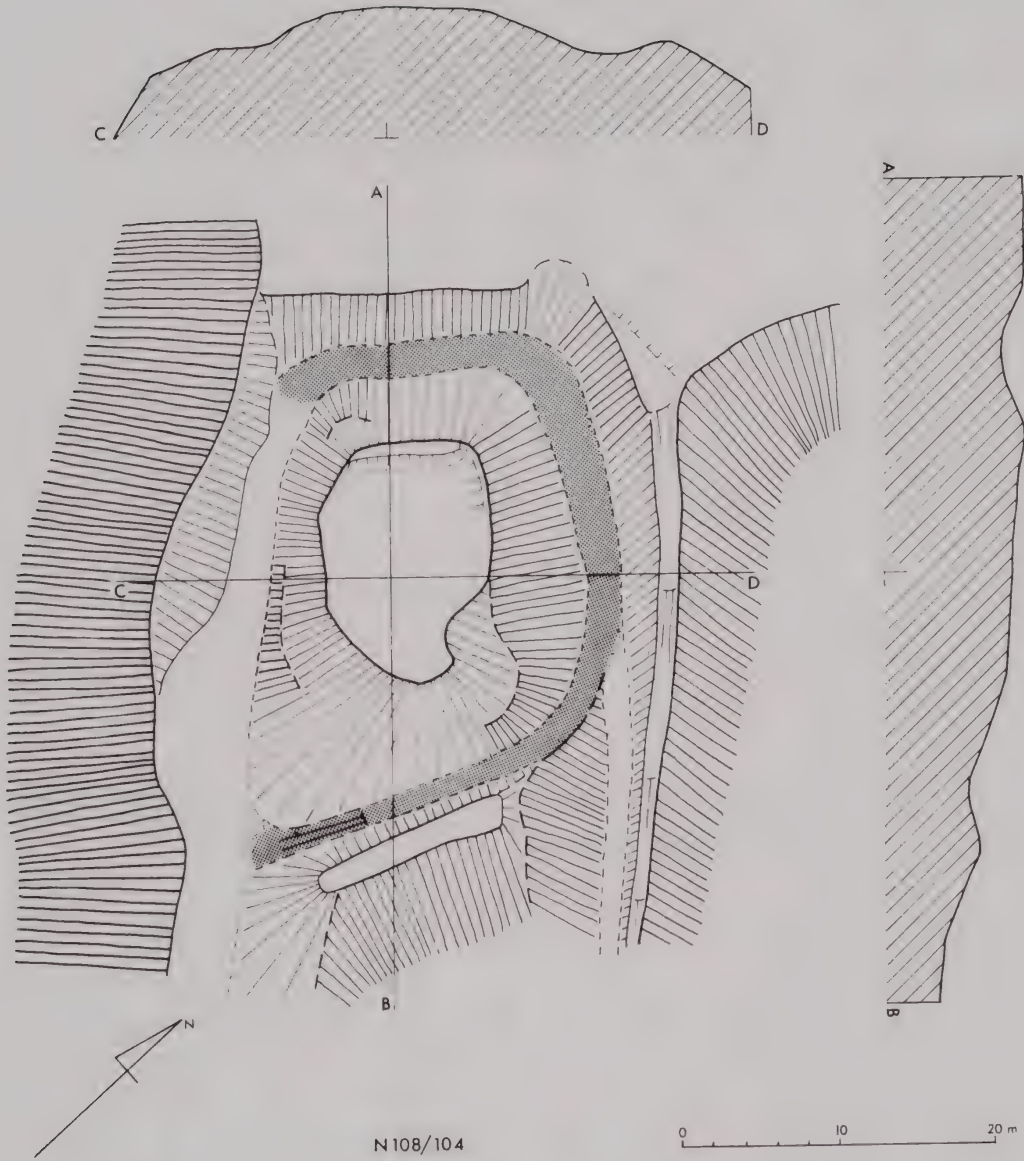


Fig. 5. Plan and sections of N108/104.

The platform scarp is now 1.5-2.5 m high. A pronounced rim bank survives at the vulnerable north-west side of the platform.

Erosion of the margins now obscures the basically rectangular plan of the occupation platform, which may originally have been 16 x 12 m in size (*ca.* 180 m²).



Fig. 6. N108/104 (right foreground) — aerial view from the north (1975). N108/102 visible, over Katikara River (see Prickett 1982:43-45).

N108/160 (473808) Fig. 7

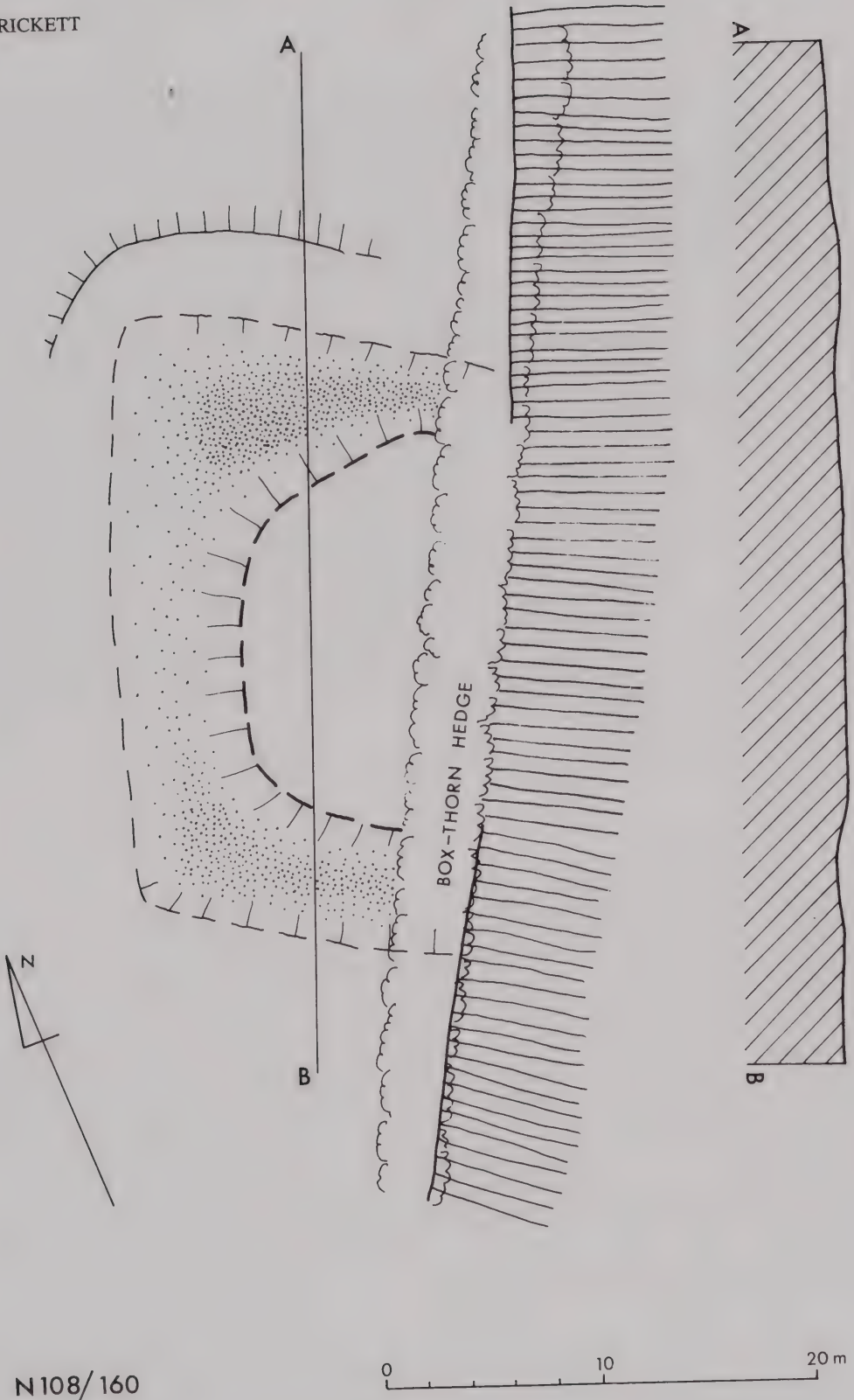
This small fortified site is situated on top of the escarpment on the left bank of Katikara River, 1 km from the sea. To the north is N108/101, while 150 m to the south is N108/104. North-west 150 m is the historic pa of Porou. N108/160 is almost destroyed by cultivation and is now under grass except at the terrace edge where dense boxthorn may obscure surviving earthworks.

Natural defences are strong only at the rear (south-east) side where there is a 25 m scarp to the Katikara River. The other three sides all offer easy approaches. Artificial defence consists of a single ditch and bank which can be traced around three sides of the fortification.

Present archaeological evidence indicates a rectangular, virtually level, defended area 18 x 10 m (*ca.* 180 m²).

N108/101 (473811) Fig. 8

This fortification occupies an extensive spur above the left bank of Katikara River. It commands the river valley and the narrow gully to the west. The higher terrace edge is 200 m away to the north and west. N108/101 has been badly damaged by cultivation and little more than the transverse defences are now visible. The site is under grass.



N108/160

Fig. 7. Plan and section of N108/160.

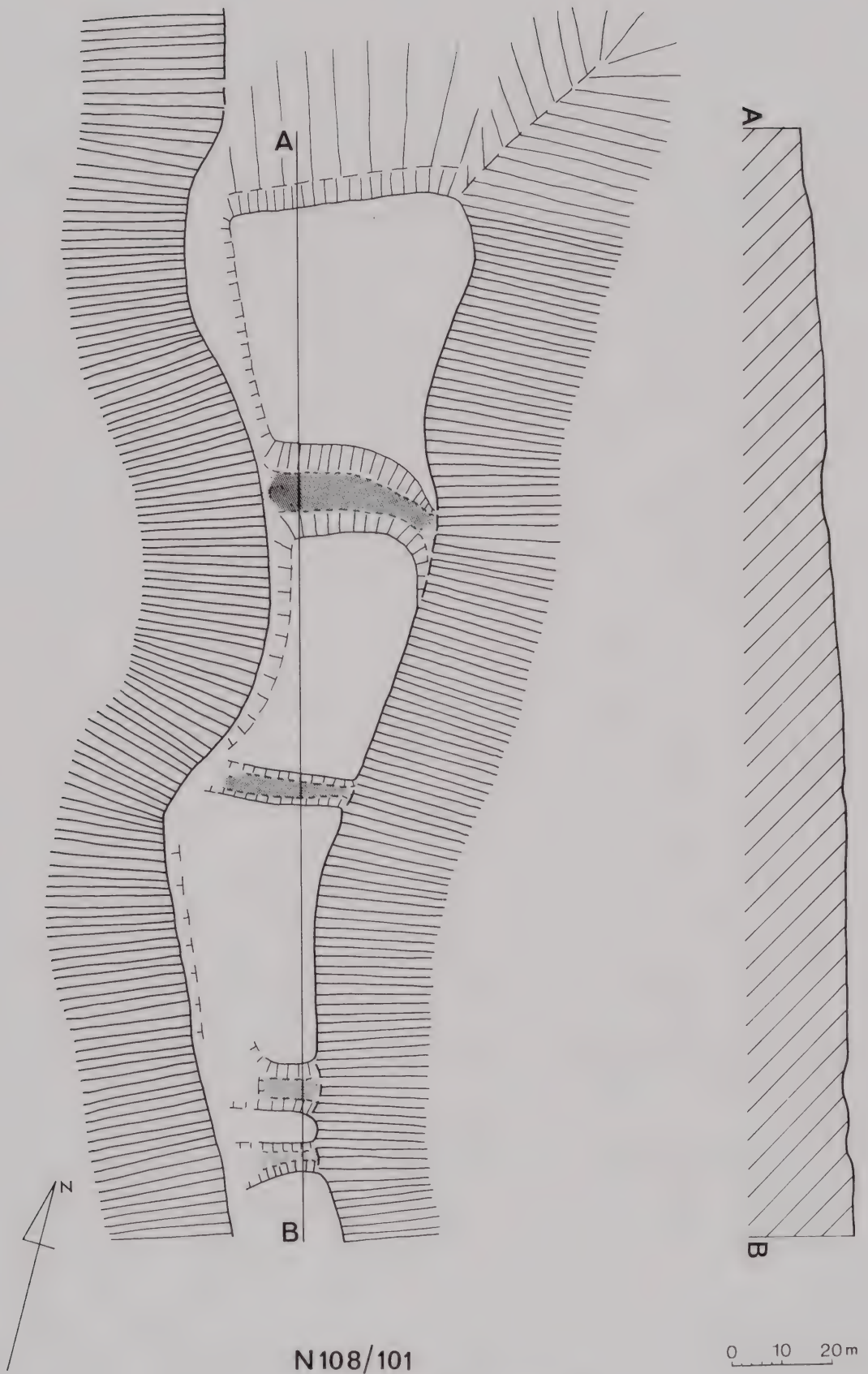


Fig. 8. Plan and section of N108/101.

Natural defences consist of steep escarpments, 15-20 m into the valley of the Katikara River east, and 12-15 m into the gully west. The broad end of the spur offers a comfortable approach from the river valley. Access is easiest down the spur from the terrace country to the south. Visible artificial defences comprise a double ditch and bank which cuts the spur at its narrowest point (20 m wide) at the vulnerable south end, two (possibly three) other internal transverse ditches, and terrace and scarp defence at the north end. Other terrace and scarp defence can be made out along the western flank of the three major occupation platforms and doubtless also occurred along the east side where the platform dips directly to the valley floor.

The occupation platforms dip slightly to the north. The site is made up of three or four separately defensible platforms. Within the double ditch and bank of the south-east end is a platform 50 x 22-28 m (*ca.* 1300 m²) which may (from the 1950 aerial photograph, 1789/2) have been divided in two by an additional transverse ditch which the survey team did not pick up on the ground. The second platform, measuring 48 x 24 m (*ca.* 1100 m²) has some indication of internal organisation in the form of a terrace at its eastern margin. The third platform is 50 x 30-46 m (*ca.* 1900 m²); two or three dimples at the northern edge may represent *rua*. Including internal ditches the total area within the outer ditch of the south end is *ca.* 5300 m². On a small knoll within the gully beyond the northern defences are signs of terracing and possible *rua*.

Haurapari N108/163 (472819) Fig. 9

Haurapari occupies the rising northern extremity of terrace country west of Katikara River. It commands the beach north-east to the famous pa Tataraimaka, as well as the valley of the Katikara River to the east and the broad terrace country inland to the south. The site is *ca.* 30 m above the adjacent sea beach and river valley. In the 1950 aerial photograph (1789/2) only a short section of defensive ditch and bank remains intact. Since then it too has come under cultivation. Remaining archaeological evidence consists only of slight dips and rises in the paddock which signal the former ditch and bank defences.

Natural defences are strong at the north and east sides. Artificial defence consists of a formerly massive ditch and bank, 195 m long, which cuts the terrace from river scarp to sea cliff just at the point where a slight rise to the north gives some natural advantage. Twenty-five metres forward of this a second ditch and bank also appears to have originally extended across the terrace. Much of this second line of defences is now destroyed: a 70 m length of the northern part is still visible and the southern end can be seen where it meets the scarp to the Katikara River.

Within the inner ditch the defended area of this pa measures almost 200 x 80 m, giving a defended area of *ca.* 8500 m². If the area between the two lines of defence is added then the defended area totals *ca.* 10,000 m². The area within the defences has all been cultivated and shows no sign of internal organisation except for three or four possible *rua* outside the cultivated area above the cliff at the north-east edge of the site.

N108/97 (463787) Figs. 10, 11, 12

N108/96 and 97 are adjacent ring-ditch fortifications situated on the left bank of an eastern branch of Maitahi Stream, a little over 2 km from the sea, adjacent to Perth Road.

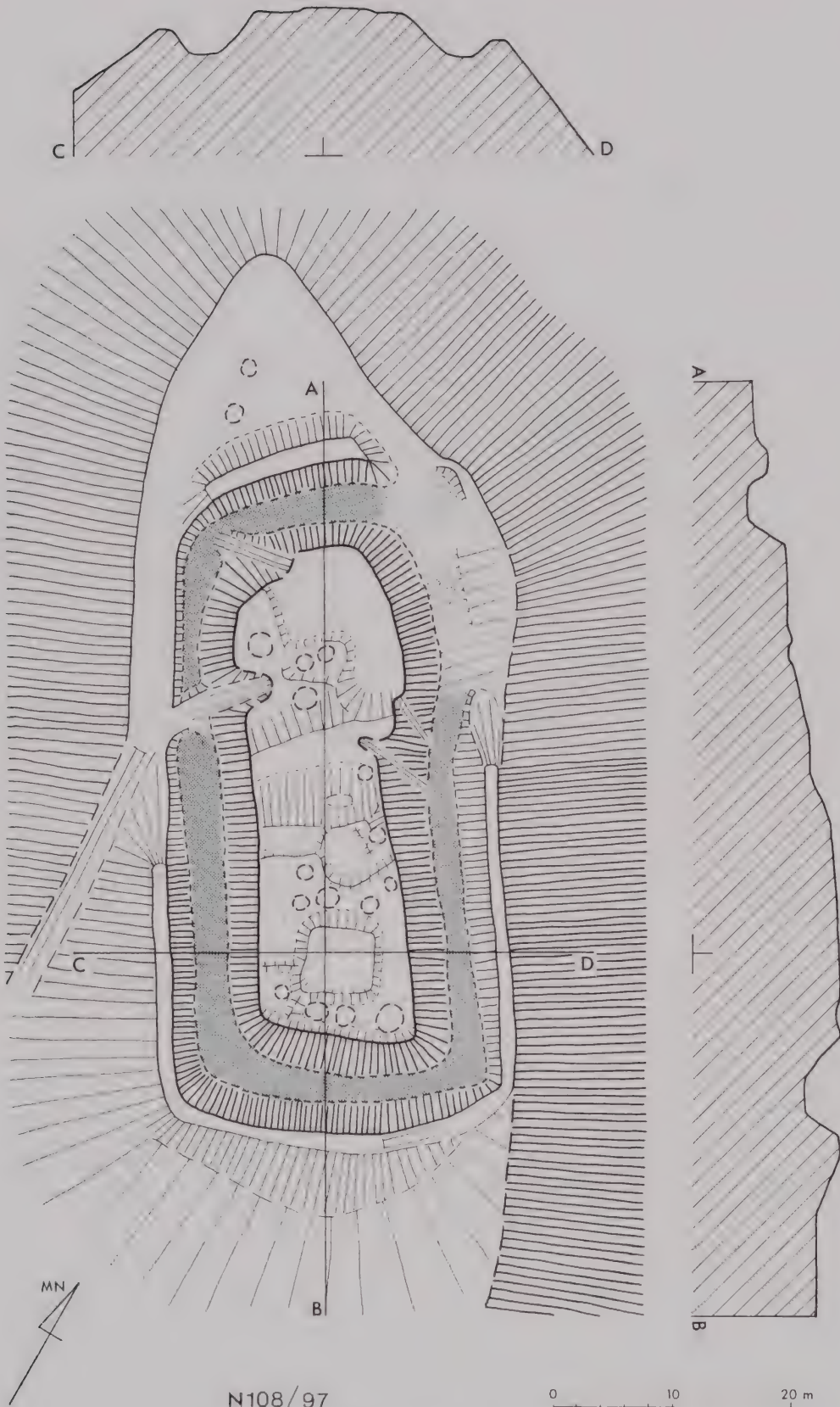


Fig. 9. N108/163 — aerial view from the north (1975).

N108/97 is under grass. It has sustained some damage in the past by farm access making use of the outer defensive bank at the north end. At present it is suffering severely from stock erosion.

N108/97 is a simple ring-ditch fortification. It makes use of a slight eminence bounded on three sides by gullies, and has command over adjacent terrace country except to the north-west where N108/96 occupies a higher knoll only 150 m away. The platform stands 12 m above the gully to the east and 6-8 m higher than the head of the gully to the west. It has a 3 m advantage over adjacent terrace country to the south; from which is the easiest approach. Artificial defences comprise a single encircling ditch and bank. Except where it has been destroyed the defensive bank is a very pronounced, rising sharply from outside the pa and standing as much as 3 m (at the upper, south-east, end) and generally *ca.* 1.5 m, above the ditch. The platform scarp is close to 3 m high all around. An abrupt rim bank at the vulnerable south-east end has almost disappeared through the present active erosion of the platform scarp.

The occupation platform dips 4.6 m from south-east to north-west. On it are upwards of eight terraces of various sizes and shapes, including a pronounced 6 x 5 m *tihī* at the upper end. Between the *tihī* and the platform rim bank is a line of four *rua*. Another eleven *rua* are scattered throughout the remainder of the platform. Outside the low north-west end of the fortification is a triangular platform, 12 x 15 m, with two *rua* on it. Another possible *rua* is below this platform to the north. The defended platform is 41 x 10-14 m giving an area of perhaps 480 m². The undefended area at the north-west end may give another 100 m² living space.



N108/97

0 10 20 m

Fig. 10. Plan and sections of N108/97.



Fig. 11. N108/97 (left) and N108/96 — aerial view from the north (1975). Behind is Perth Road.



Fig. 12. N108/97 — view north-east from Perth Road (1975).

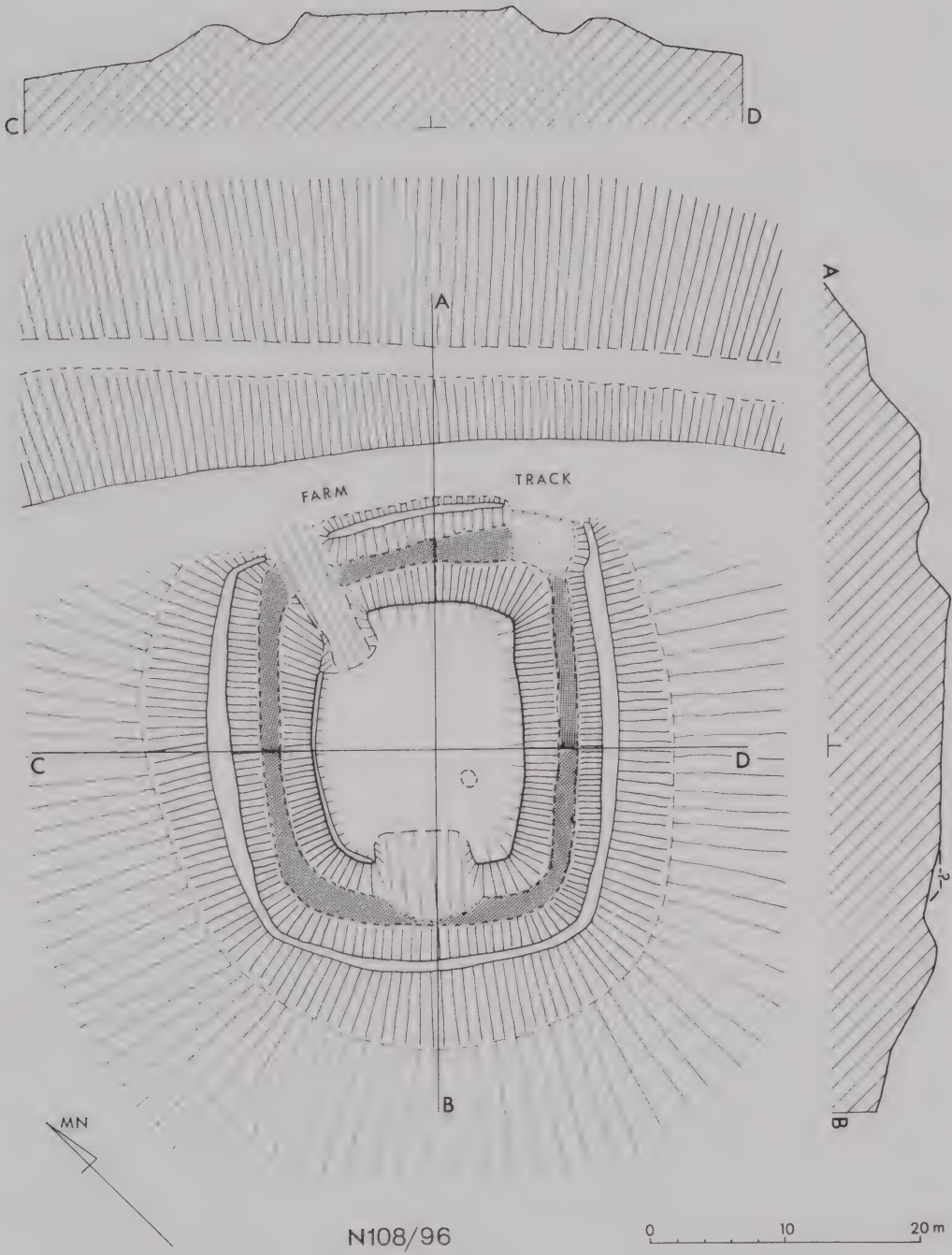


Fig. 13. Plan and sections of N108/96.

N108/96 (462788) Figs. 11, 13, 14

N108/96 is 150 m north-west of N108/97, on the left bank of a branch of Maitahi Stream, just east of Perth Road. It is higher than nearby N108/97 and so dominates the interior of the latter site which dips to the north. From their complementary locations it seems likely the two fortifications were sited for mutual support and are thus contemporary. N108/96 is now under grass with past bulldozer damage to the outer bank and platform margins, and some present stock damage.

Natural defences of the site are strong. To the east is a 15 m fall into the nearby gully. On the other three sides the pa stands well above steep approaches from adjacent low-lying ground. The site occupies a commanding position with views all around over nearby terraces and gullies. Artificial defences comprise a single ring-ditch and bank encircling the almost square platform. More than usually, age has softened the physical detail and sharpness of this site. Remaining evidence is for a counterscarp 0.75-1.5 m high and a main platform scarp *ca.* 2 m high. A slight rim bank (now most pronounced at the north-west side) may have encircled the platform.

The simple level occupation platform is 15 x 19 m (250 m²). The only sign of internal organisation is a single *rua* towards the southern corner.



Fig. 14. N108/96 — view from the south (1975).

N108/95 (459783) Fig. 15

This small pa is situated on a slight saddle above the headwaters of the two main branches of Mangakino Stream. Flanked by two gullies it occupies the easiest route on to the terrace country which lies to the north-west. Its situation allows good natural defence over the gullies north-east (6 m below platform) and south-west (8-10 m), but little command over the slight saddle to the south-east and none over rising ground to the north-west. The site is now under grass with defences at both ends having suffered some damage in easing access along the ridge. Some slumping and erosion is occurring along the south-west flank.

Artificial defence consists of a single transverse ditch at both ends with a terrace, probably originally a ditch, along the north-east flank. The transverse ditches are now only 50 m deep. The remains of a slight bank can be seen on the platform rim at the more vulnerable north-west end. The defences seem hardly adequate for the situation.

At least seven *rua* appear to have been concentrated down the centre of the level occupation platform. The platform area is *ca.* 540 m² (18 x 30 m).

N108/191 (457790)

N108/191 occupies a high terrace edge above the left bank of the easterly tributary of Mangakino Stream, 500 m north-west of N108/96 and 97. The site is now virtually destroyed with only faint remains of part of the defensive ditch visible, along with some fragmentary shell midden spilling down the steep slope to the stream. The name 'Hauwai' is given on the old 'Wairau and Cape Survey Districts' cadastral map, marking a place which appears to be about 100 m south of N108/191. There is now no sign of any occupation at the marked point, but the present landowner reports shell midden and *rua* a further 1-200 m south on a low lying spur bounded by the branching stream. The name may refer to this apparently undefended settlement or to N108/191, the defended site under discussion here.

In the 1950 aerial photograph (1790/4) an angled ditch can be seen cutting the rising promontory from adjacent terrace country. The ditch has clearly already suffered considerable damage through cultivation. All that can be seen today is the 40 m southern part of this ditch on one side of the fence which now cuts both ditch and pa. North of the fence the ditch is no longer visible on the ground, although *ca.* 20 m further out in the paddock there are faint indications of another possible ditch. On the east side of the site, defences have been left to the 15-18 m scarp to the stream.

The defended area of the site is *ca.* 50 x 30 m and may be as much as 1000 m².

Parawaha N108/188 (442799) Figs. 16, 17, 26

Parawaha is located on a slight but commanding point of land on the sea cliff above the north bank of Mangakino Stream, *ca.* 600 m north-east of the Kaihihi River mouth. The pa is clearly a major site of the district both by its size and defences and by its commanding situation. There was a late nineteenth century *kainga* in the lee (east) of the earlier fortification: fragments of bottle glass and china are eroding from the scarp to

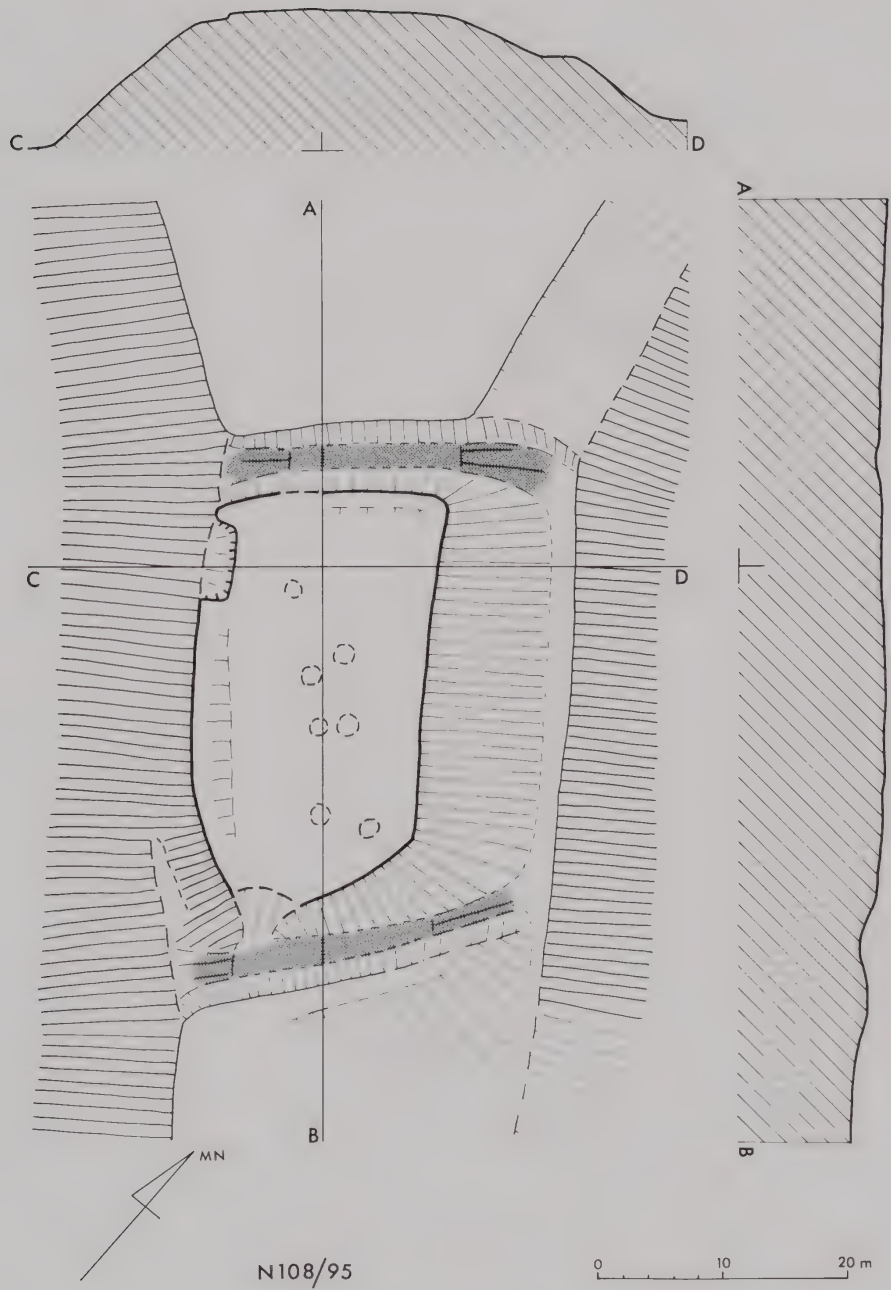
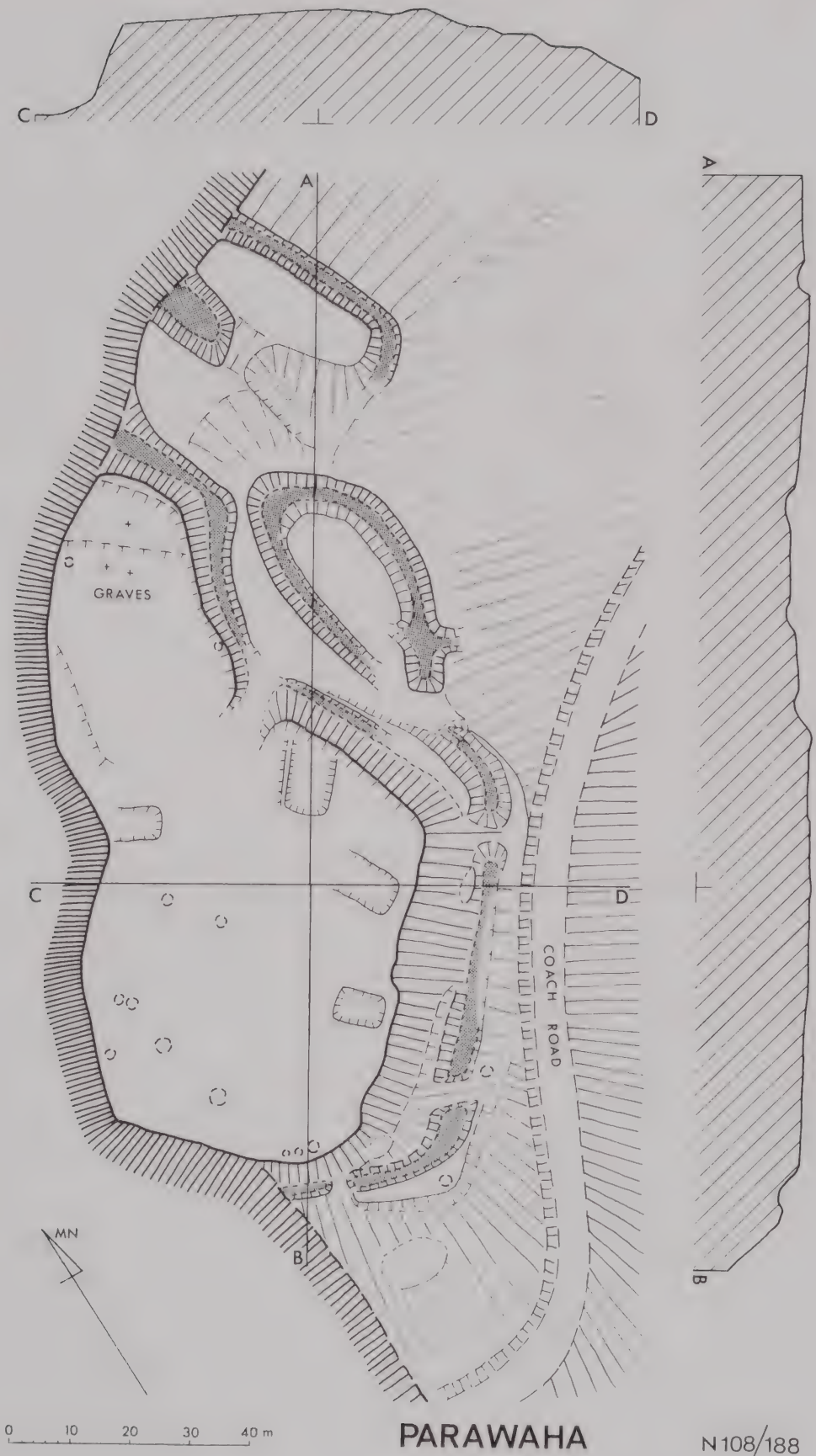


Fig. 15. Plan and sections of N108/95.



PARAWAHA

N108/188

Fig. 16. Plan and sections of Parawaha (N108/188).

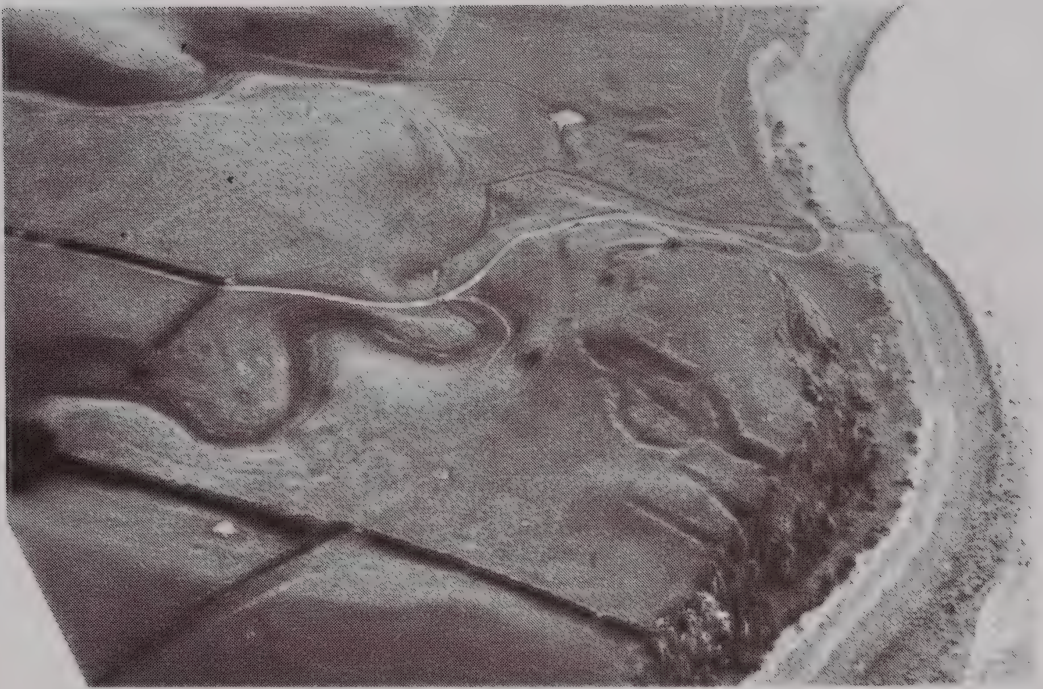


Fig. 17. Parawaha (N108/188) — aerial view from the north-east (1975).

Mangakino Stream. The old coastal road (the main route south from the New Plymouth settlement prior to the Taranaki campaigns of the early 1860s) skirts the pa as it descends to the sand flat and the Kaihihi River crossing. The site is now under grass and appears to be unmodified except for the nearby coach road.

Parawaha is strongly sited 15 m above the narrow valley of the adjacent Mangakino Stream to the south and 15 m above the sand flat behind the broad boulder beach to the north. The easiest approach is from the east where the main platform of the pa stands 5 m above extensive terrace country nearby. Artificial defences consist of a ditch and outer bank which extends around the southern and eastern sides of the pa 3-4 m below the platform rim. Additional ditches bar the vulnerable east end, including an unusual out-work set in front of the main entrance to the pa (see Fig. 16). Other ditches defend subsidiary platforms on the cliff top, again at the east end.

The pa is *ca.* 180 x 70 m overall. The main platform has maximum dimensions of 120 x 50 m. Several rectangular depressions on the platform probably represent houses, while ten *rua* over the western half and two near the eastern end represent perhaps a small part of the likely original food storage capacity. Three or four historic burials are situated at the east end. Below the platform rim at the west and south sides are three terraces and two possible *rua*. The total defended area of Parawaha, including the main platform (*ca.* 4000 m²) and subsidiary platforms at the east end (*ca.* 1000 m²), is *ca.* 5000 m².

Puketi N108/194 (477768) Fig. 18

Puketi is situated above the right bank of a tributary of Kaihihi River, 4.5 km from the sea. It commands a rising terrace, inland of Maitahi Stream and narrowing between the watersheds of Kaihihi River and the steep-sided Katikara River valley to the north. The site is now under grass with fruit trees planted on the platform. Massive pine and macrorarpa trees line the southern platform rim and defences. Remnant native bush including rewarewa, kohekohe, karaka, mamaku, rangiora and kawakawa is mainly in the ditch and bank on the north and west sides and in the gully to the south. Damage to Puketi includes a

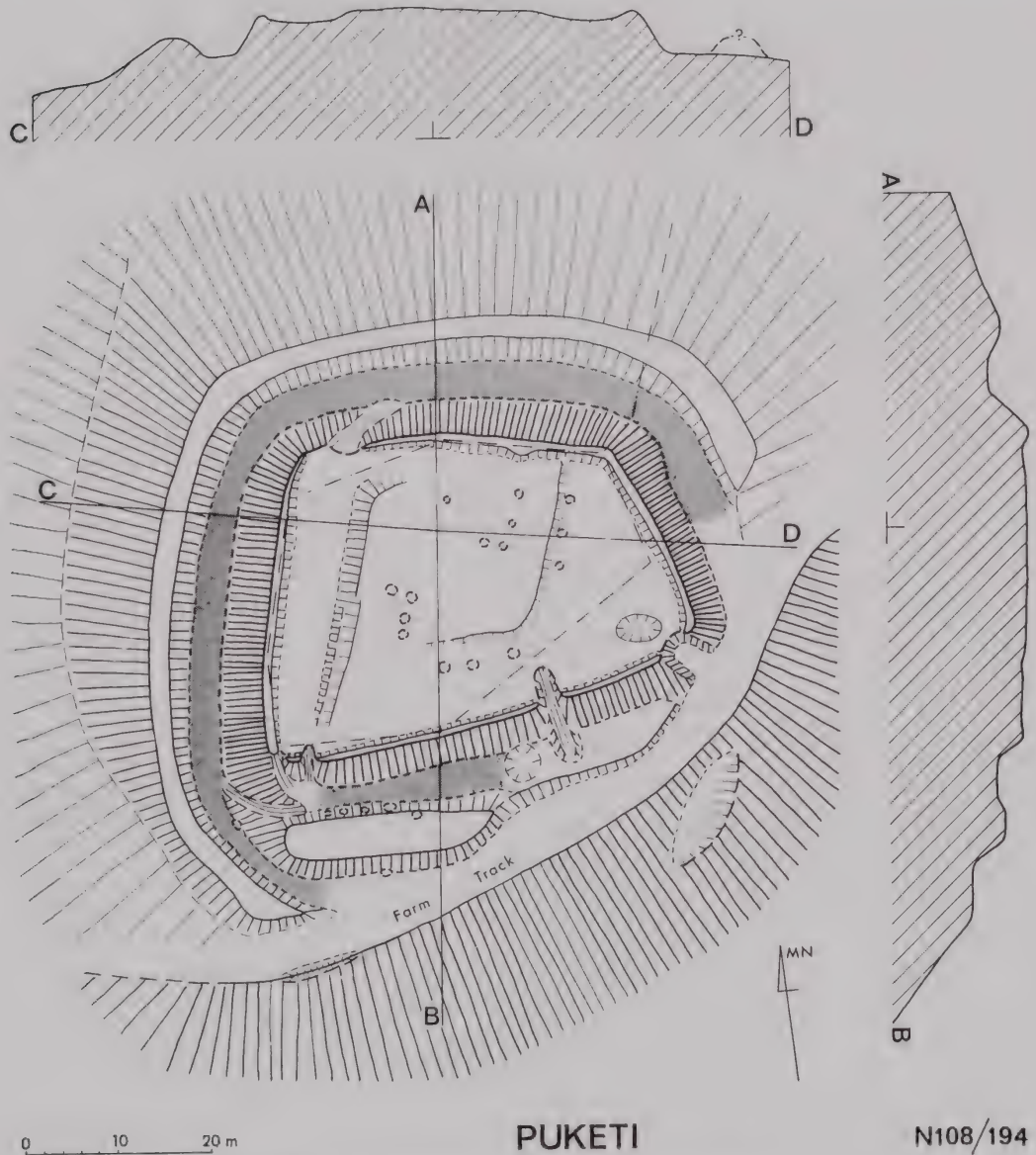


Fig. 18. Plan and sections of Puketi (N108/194).

farm road which has destroyed much of the defences on the south side, and a quarry dug into the south-east corner of the platform. The large trees are now helping break up scarps. Stock damage is severe in places.

Puketi is strongly sited on a spur of high ground which extends along the terrace edge to form a prominent knoll 8-10 m above the Perth Road terrace country to the west. To the south is a precipitous 25 m scarp into a now swampy gully. On the north-east side the natural advantage diminishes as adjacent ground rises towards the main road, while up the spur is a very slight saddle 100 m across to higher ground. Artificial defences consist of a single strong ditch and bank which now extends around the north and west sides of the pa and may have once continued right around where the farm road cuts the ground above the gully. Evidence for its presence above the gully includes a truncated section of bank beyond the farm track at the south-west corner and the remains of a ditch below the track at the south-east corner. Curiously, it is on the naturally strong south side that there is additional defence in the form of a second ditch, within, and 2-3 m above, the remains of the outer defences. The main (platform) scarp is 3-5 m high with the counterscarp 1-2 m where it survives. Virtually the entire circumference of the platform is topped by a well preserved bank, 0.3-1 m high.

The defended platform is divided into several areas by low scarps. Fifteen *rua* occupy four discrete areas. A large open pit at the south-east corner may represent a further one or more collapsed *rua*. Five more *rua* are dug into the counterscarp of the inner ditch on the south side or, in one case, is entered from the top of the broad bank nearby. Another *rua* may be represented by the open hole in the ditch nearby. Two further *rua* are dug into the foot of the main ditch scarp, again in the south-west corner. The total of visible *rua* is 22. The four-sided occupation platform is 33-46 x 21-32 m giving a defended area of *ca.* 1100 m² (excluding the use of defensive areas for storage).

N108/89 (471762) Figs. 19, 20

N108/89 is set above a lower tributary of Kaihihi River 1 km north of the Okato post office. It is a large and important fortification which has been very badly damaged in recent years. In the 1950 aerial photograph (1791/7; see Fig. 20) a single massive ditch can be seen curving around a clump of pine trees which at that time stood on the pa platform and defences. Further down the spur (north-west) is surviving native bush. In recent years the pines have been removed with extensive bulldozing virtually destroying the curving ditches and outer defences at the south-east end of the site. More bulldozing has caused great damage to the subsidiary platforms down the spur making these difficult to interpret. The site is now under grass and some gorse, with relict native vegetation at the margins and in the adjacent gullies.

This large pa is strongly located on a high point between two gullies. At both sides the gullies are 15 m or more deep with terrace country beyond dominated from the site. Below the major defended platform the site continues down the spur until the latter dips sharply to the gully fork. At the south-east end the platform is 4-5 m higher than the adjacent approach to the pa; higher ground is 120 m distant. Artificial defences include a ring-ditch encircling the upper platform with one or two additional transverse ditches cutting the spur at the vulnerable south-east end. (The outer of these is the curving ditch to be seen in the 1950 aerial photograph.) Surviving archaeological evidence suggests a deep

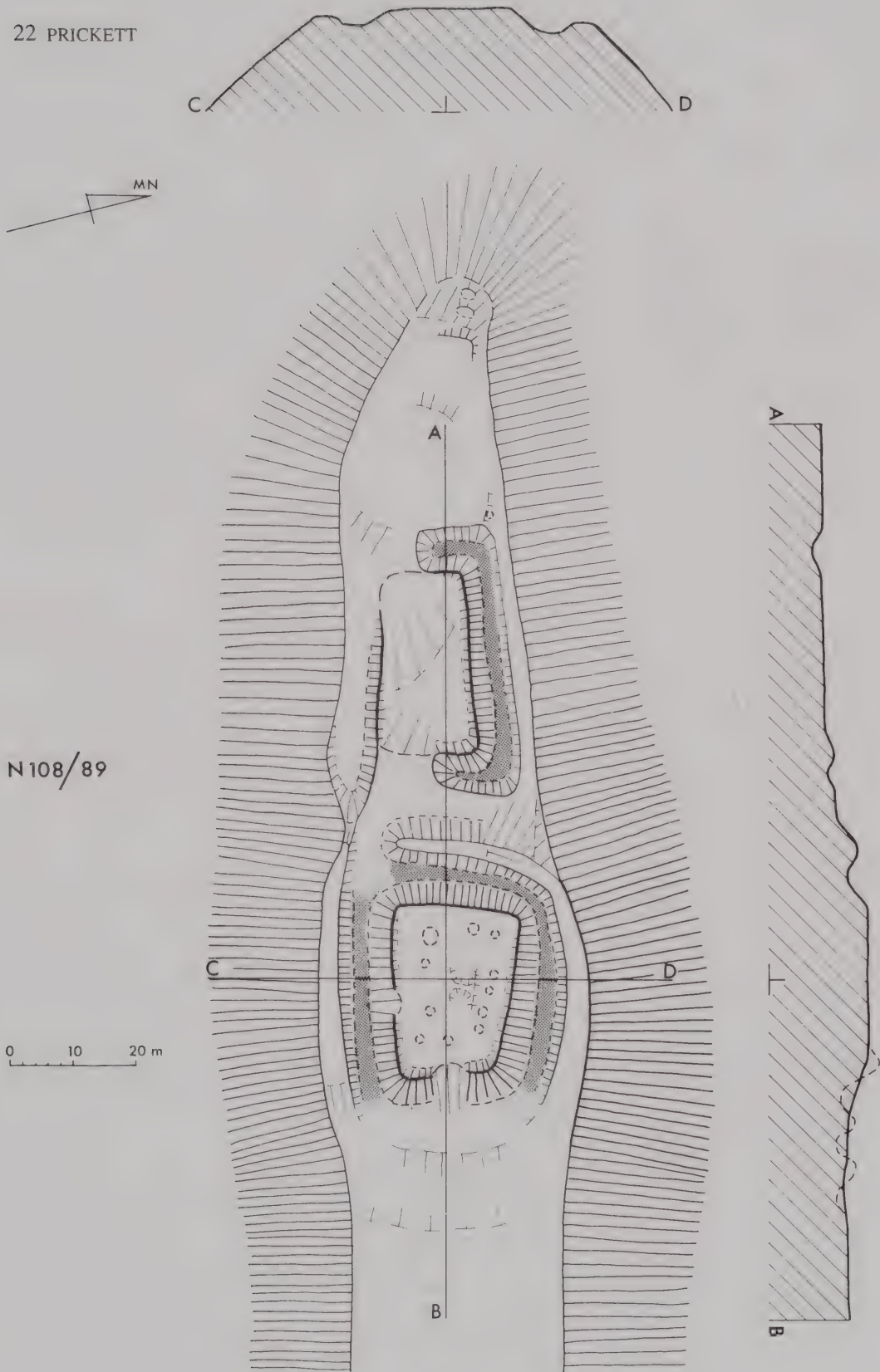


Fig. 19. Plan and sections of N108/89.

ditch and high encircling bank with the platform scarp 3.5-5 m in height. A slight bank tops the platform rim on three sides. North-west of the main ring-ditch defence is a lower second platform which may also have had ring-ditch defence although evidence for this now survives only at the north-east flank and adjacent ends, and to a degree only on the south-west side. A strong bank tops the platform rim along the intact north-east sector.

Eleven *rua* can still be seen on the upper platform of the pa. These are all similarly located 4-5 m in from the platform rim. The second platform, some 6.5-8 m below the chief defended area, now has no sign of food storage pits or other internal organisation. Outside this a further 40 m of spur contains badly damaged terrace and scarp defence with one *rua* and two small terraces surviving at the margins. This large pa was 130-140 m long and 30-45 m wide. The upper defended area is 25 x 16-20 m (ca. 425 m²). The lower defended area may have been 435 m² (29 x 14-16 m). Outside these defences at the north-west end of the spur is an occupied area possibly 400 m². Thus the total defended area may have been 860 m², and possibly in excess of 1250 m² if the inner end of the spur was also defended behind the ring-ditch which cut the spur and above the steep banks to the stream.



Fig. 20. Part of 1950 aerial photograph (1791/7) showing N108/87, 88, 89 and 193. Puketi (N108/194) is obscured under trees at extreme right.

Photo: N.Z. Aerial Mapping Ltd.

N108/193 (465764) Figs. 20, 21

N108/193 is inconspicuously located on a low spur end between two branches of a northern tributary of Kaihihi River. It is almost 4 km from the sea, in an area close to the deepening valleys and rising ridges which back the coastal terrace country of the Okato district. One hundred and fifty and 200 m northward are the fortifications N108/87 and 88, and 300 m eastward is N108/89. N108/193 is under pasture with massive pine trees on the platform and defences. Considerable erosion of platform scarps is apparent from the now aerial root systems of the pines, while some damage has resulted from preparation of a line for the present fence along the south-west side.

Natural defences of this site rely on a steep 10 m scarp into the gully south-west, and a less commanding but still useful fall into the adjacent lower ground to the north and north-east. The approach from the spur end is not difficult, while the site has only slight natural advantage over the ground up the broad spur to the south-east. The platform is indeed dominated by a higher terrace rim across the gully only 50 m to the south-west and, again, by the more distant but considerably higher ridge to the north-east on which N108/87 and 88 were situated. Artificial defence is of ring-ditch form. There is an additional transverse ditch at both ends and a second incomplete ditch at the north-west end. The unusual aspect of the lateral ditch apparently extending into two transverse ditches at both ends may be the misleading result of recent bulldozer work. The main platform scarp is still 2-2.5 m high, with counterscarps when apparent, 1-1.5 m. It is curious that the present evidence for a bank on the platform rim is at the stronger down-spur end where despite erosion it still stands 80 cm above the adjacent platform.

On the platform are seven large open holes which probably represent collapsed *rua* of the usual form. Behind the bank at the north-west end is a rectangular depression *ca.* 5 x 6 m in size. The site covers an area *ca.* 80 x 35 m; the defended platform, however, is only 36 x 14-16 m (*ca.* 550 m²). Access appears to have been from the west corner (down-spur end) and on to the platform just within the rim bank.

N108/87 (465766) Fig. 20

This site is located low on a spur which dips north-west to the right bank of a lower tributary of Kaihihi River. Immediately over the gully to the north is N108/88; 150 m south is N108/193. N108/87 shows up clearly on the 1950 aerial photograph (1791/7; see Fig. 20), but was virtually destroyed in the early 1960s along with the two nearby ring-ditch works which are recorded together as N108/88. The site is now under grass with a macrocarpa plantation extending down the western side.

N108/87 is in two parts. The higher consisted of a simple ring-ditch fortification which stood on a slight knoll on the spur, giving good command over the gullies north-east and south-west and over the steeply falling spur north-west. It has almost no advantage over rising ground south-east up the spur and is completely dominated from the adjacent fortifications (N108/88) over the gully to the north which are 15 m higher and only 60-100 m distant. It seems likely that the ring-ditch work at N108/87 was indefensible on its own and that it and N108/88 make up a single contemporary defensible complex.

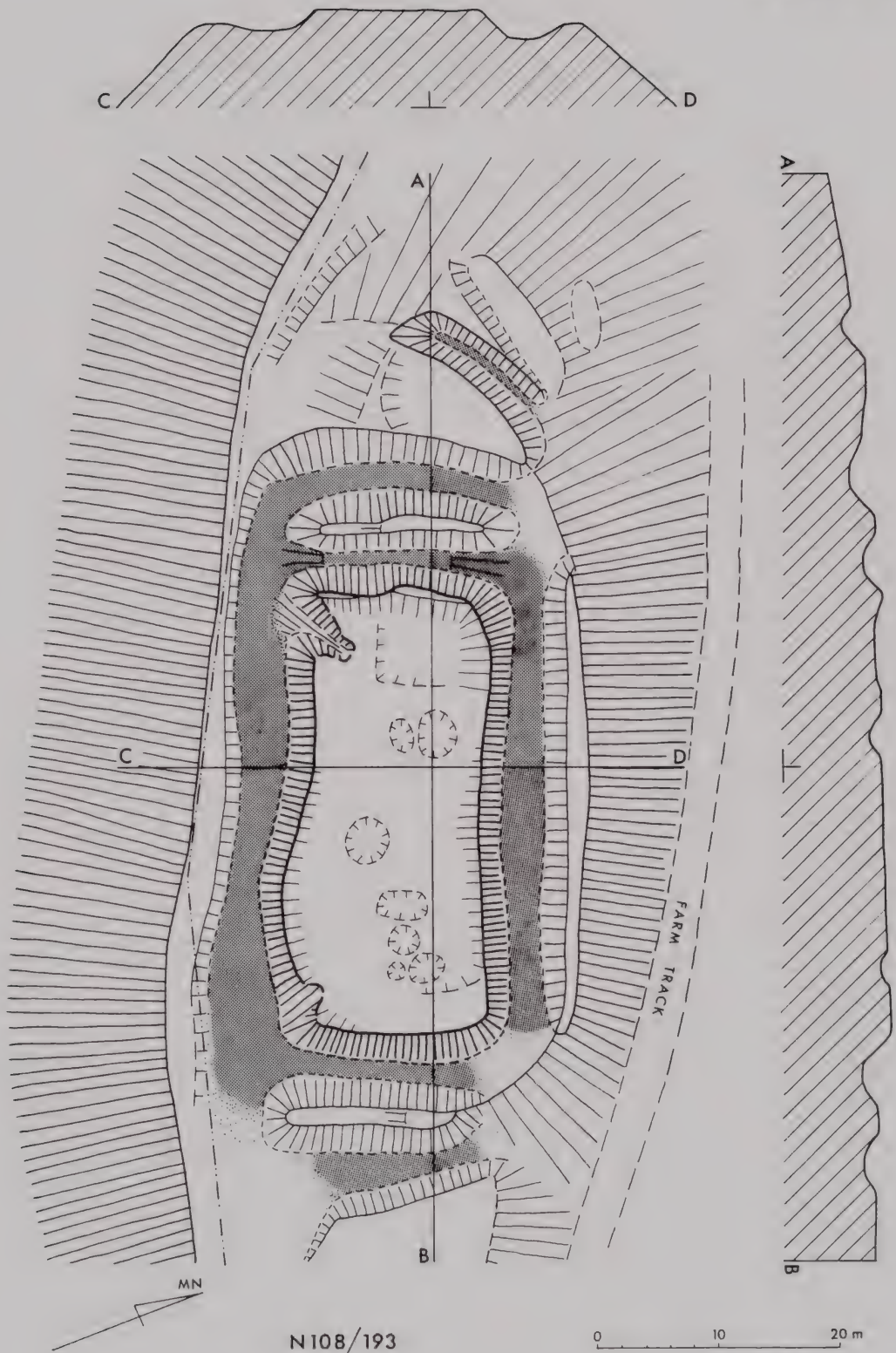


Fig. 21. Plan and sections of N108/193.

The ring-ditch earthwork can now barely be made out on the ground where a slight dip along three sides indicates a ditch *ca.* 25 m long and 15 m across the spur. The platform area may have been 200 m². Forty metres down the spur is a knoll *ca.* 25 x 10 m on which are some difficult terraces and four (perhaps six) *rua*. This part of the site appears to have been undefended.

N108/88 (465767) Fig. 20

Two ring-ditch earthworks, recorded together as N108/88, formerly occupied a knoll on the right bank of a lower tributary of Kaihihi River from which they commanded the adjacent gullies and terrace country. The smaller southerly fortification dominated nearby N108/87 on the low spur to the south. N108/88 can be seen in excellent condition in the 1950 aerial photograph (1791/7; see Fig. 20); it was completely destroyed by bulldozer work in the early 1960s. The area is now under grass.

N108/88 occupied a commanding knoll some 5-8 m above terrace country to the north and east, and 20 m above the gully to the west. Between them the two earthworks covered all approaches. The 1950 aerial photograph shows the larger northerly work to be four-sided with an encircling ditch and bank. An outer ditch curves around the north end of the fortification. The smaller, southerly ring-ditch fortification was *ca.* 1.5 m higher than the other. It is also four-sided, with a shallow ditch extending from the neighbouring work, across the 20 m gap between them, and around its eastern and southern sides. This connecting ditch gives control over the intervening ground and is proof of contemporaneity.

From the 1950 aerial photograph it is possible to establish the size of the two earthworks. The larger defends an occupation platform *ca.* 35 x 15-20 m (580 m²), and the smaller, a platform *ca.* 12 x 10 m (120 m²). Not including the area between, which was at least partially defended, the combined defended area of the two ring-ditch works was *ca.* 700 m².

N108/190 (456774) Fig. 22

This small pa was situated on the right bank of a lower tributary of Kaihihi River, 200 m east of Hampton Road. Six hundred metres north-west are N108/91 and 92. N108/190 can be seen under gorse and other vegetation in the 1950 aerial photograph (1791/5). It has since been virtually destroyed. All that remains is the faintest suggestion of a transverse ditch 28 m from the spur end. The area is now under pasture.

N108/190 occupied the end of a short spur which extends westward to the stream from higher terrace country. Natural defences include an abrupt 8 m scarp to the stream and steep slopes into gullies north and south. To the east there appears to have been no natural advantage over ground which rises to command the fortification from only 50 m outside the defences. Artificial works can be made out from the 1950 aerial photograph. A ring-ditch provided the main defence, while an additional transverse ditch appears to have cut the spur at the vulnerable east side. The small square platform was perhaps 18 x 15 m (*ca.* 250 m²).

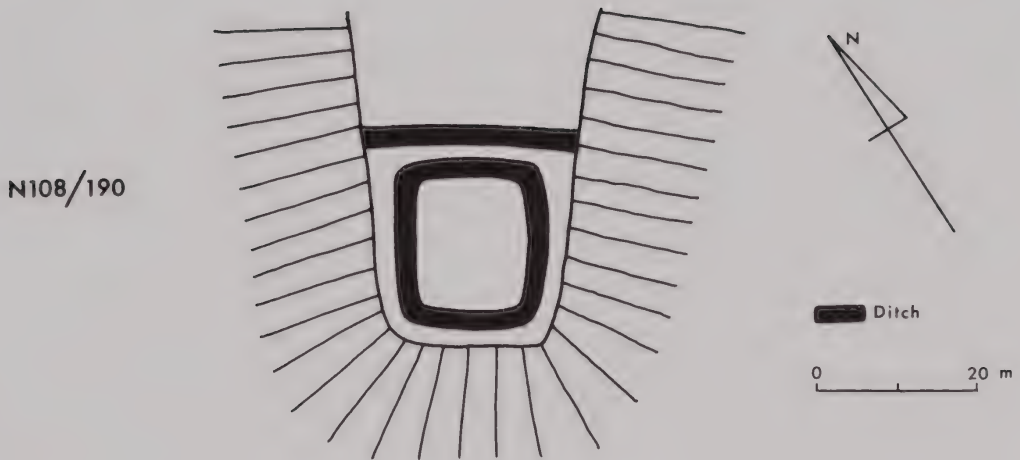


Fig. 22. Reconstruction of defences of N108/190.

N108/91 (452776) Fig. 23

Two small fortifications stand 50 m apart on opposite sides of a northern tributary of Kaihihi River. From their similarity and proximity it seems likely N108/91 and 92 are contemporary. N108/91 is now under grass with gorse on the flanks and remnant native bush in the gully to the south. The site has suffered from the making of farm access across the ditch and bank defences at the south-east corner and probably as well from a general smoothing of the platform.

Natural defences of this site are slight. There is a useful scarp 8 m into the gully on the south side and an easy 5m scarp into the rising gully head on the north side. The approach up the spur is not difficult, while the rising spur allows no natural advantage over an approach from the south-east. Artificial defences do not seem adequate to the task. A single ditch and bank extends around the site, except down the south side and where broken by a causeway at the north-west corner. The ditch is 1-2.5 m below the platform, with the counterscarp nowhere more than 1.7 m.

The occupation platform has evidence of nineteen *rua*; another is set in the causeway across the ditch. *Rua* are concentrated near the southern scarp to the gully and along the northern and eastern margins, thus leaving much of the platform centre free for above ground buildings. The main platform is 40 x 16-21 m, below which, at the north-west end, there is a small terrace. This gives a total defended area of *ca.* 800 m².

N108/92 (451776) Fig. 24

N108/92 is 50 m west of N108/91 on the opposite bank of a northern tributary of the Kaihihi River. It is now under grass and has suffered some damage at both ends, apparently in the preparation of farm access along the spur.

Natural defences are not strong. N108/92 stands 8 m above lower ground on both sides but it has only a very slight advantage over the flat topped spur north and south. A

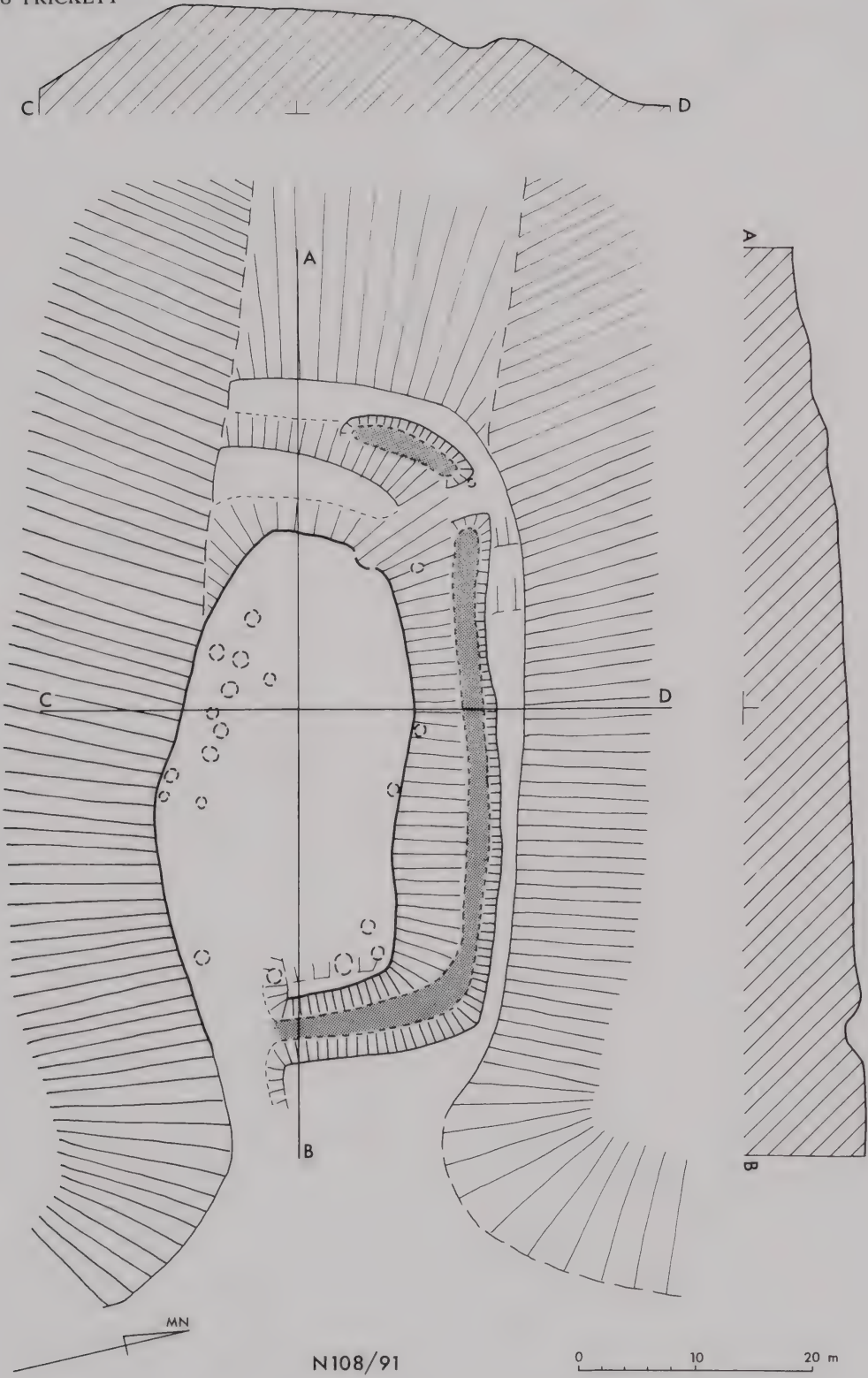


Fig. 23. Plan and sections of N108/91.

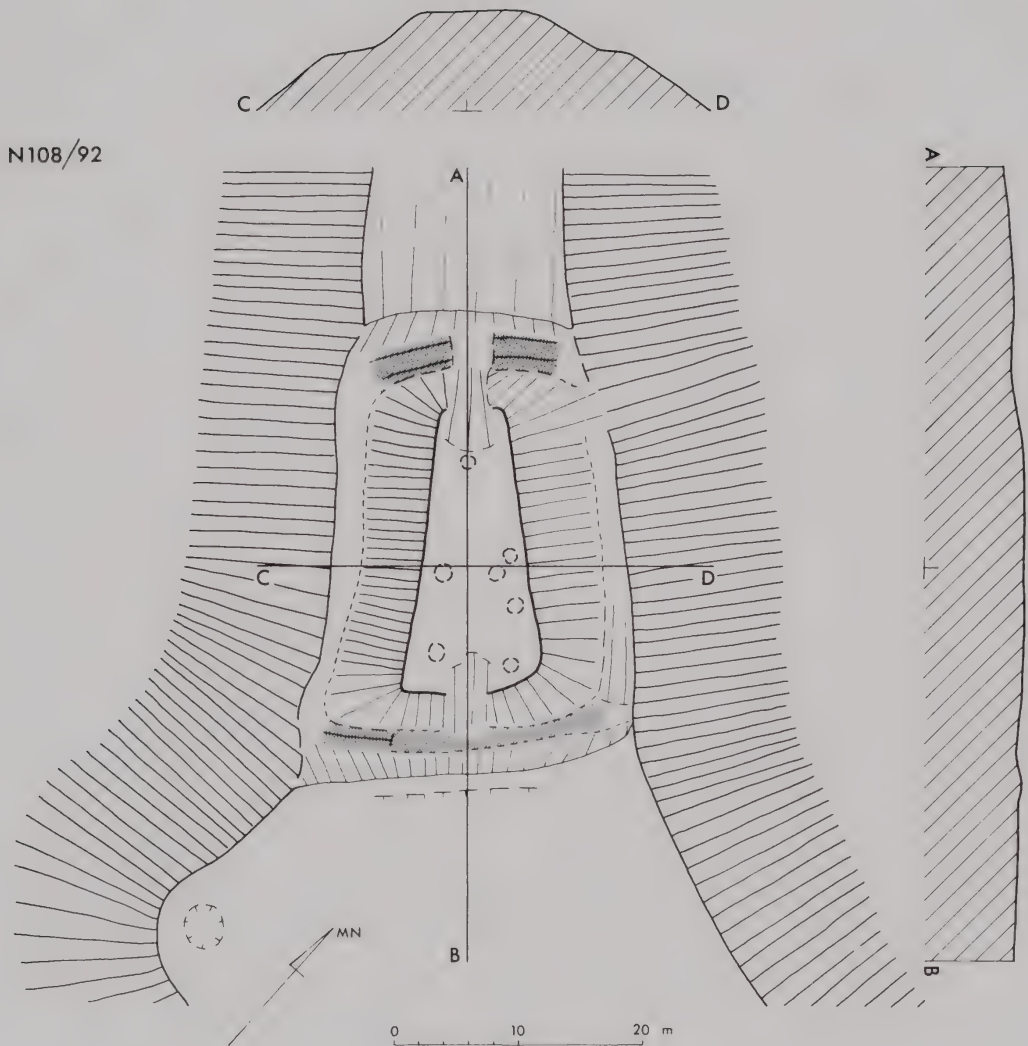


Fig. 24. Plan and sections of N108/92.

single, now shallow, ditch cuts the spur at both ends of the site, with terraces down both sides possibly representing ditches but more likely to be the remains of terrace and scarp defence.

On the single small platform is evidence of seven *rua*. The platform is 23 x 6-11 m, giving an area of *ca.* 180m².

Potahi N108/84 (464750) Fig. 25

Potahi is located within the present Okato Domain on a lahar mound truncated by the terrace edge above the left bank of the old Kaihihi river bed (the river is now some 50 m away in the narrow flood plain). The name comes from the Rigby Allen place names

index in the Taranaki Museum. The site is now in good condition under secondary bush dominated by karaka and kohekohe, with kawakawa and hangehange understorey. Some large gum trees are present on the platform and elsewhere. Three hundred metres northward is the remains of Pukekuri (N108/192), similarly sited on a truncated lahar on the terrace edge.

The defences of this small pa are unusually strong. To the rear (north-east) is a 15 m cliff to the old river bed. Elsewhere the levelled top of the mound stands 5 m above the adjacent terrace. The natural advantage is reinforced by a strong double ditch and bank, the outer of which does not quite extend to the cliff at the north-west end. Even now the main defensive scarps are 2-2.5 m high at the south-west side and 1.5 m high at the ends, with the counterscarps 0.5-1 m high.

Evidence remains for six *rua* on the platform, with a large open pit perhaps representing a seventh, now collapsed. The single, level, platform is 24 x 8-12 m in size, giving an area of *ca.* 200 m².

Pukekuri N108/192 (463753)

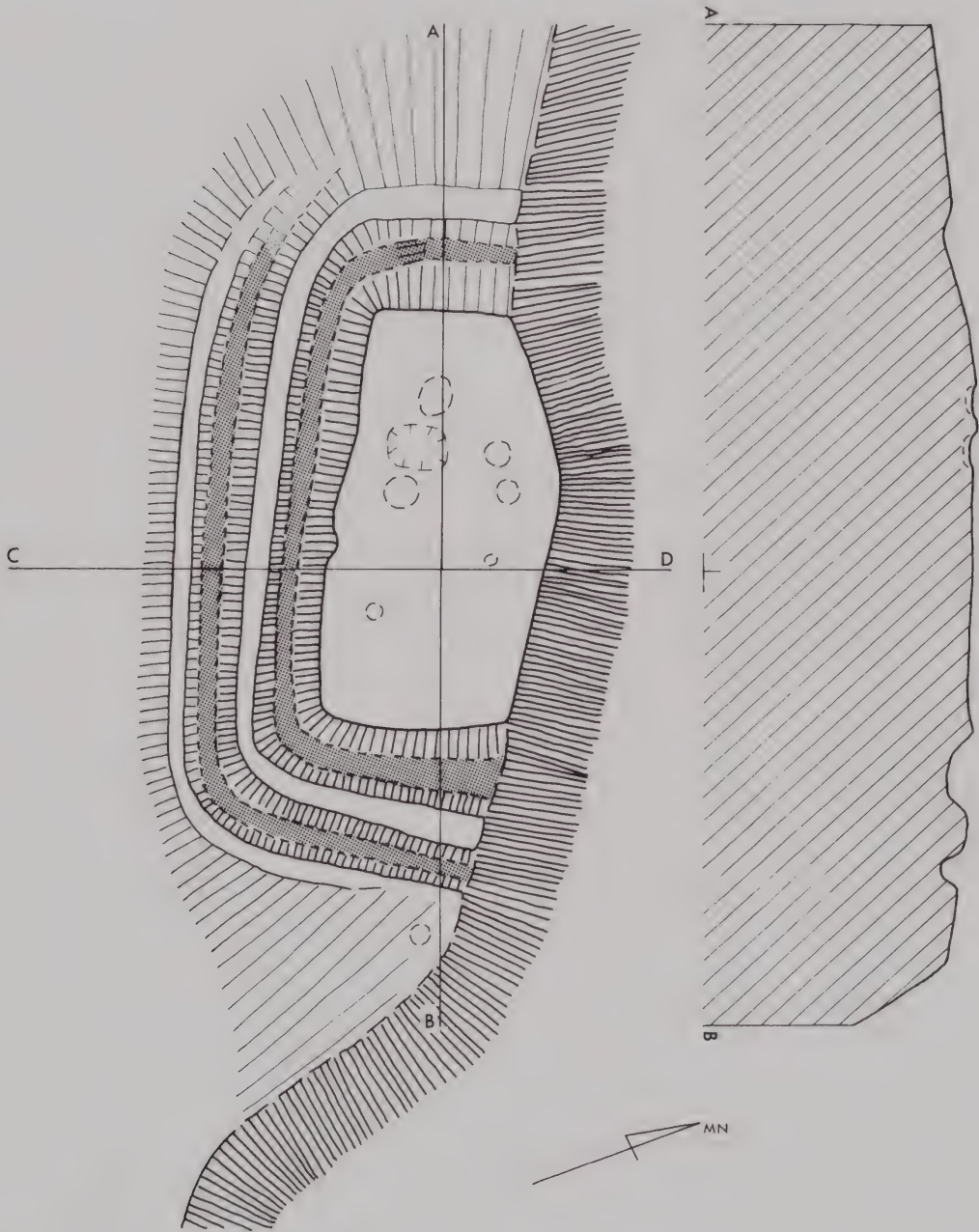
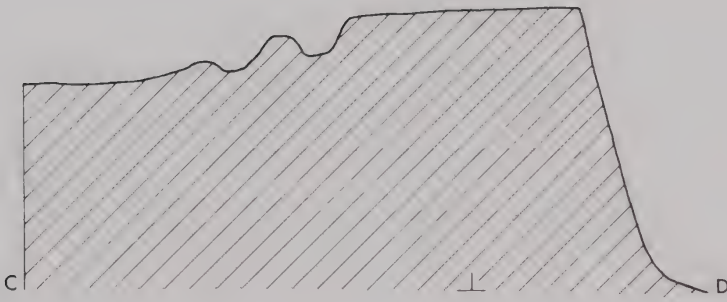
Pukekuri was situated within the present township of Okato on a lahar mound at the terrace edge above the Kaihihi River flood plain. It is 300 m from Potahi on the opposite bank of the river. Pukekuri can be seen in the 1950 aerial photograph (1791/7) where quarrying has already begun at the south side of the mound. The pa has since been virtually destroyed by quarrying, the preparation of an adjacent house site and other activity. The name is established from the Okato sheet of the Town Plan series map (Lands and Survey Department, New Plymouth).

The 1950 aerial photograph shows a flat topped mound strongly defended on the north-east side by a scarp and an outer ditch close under the mound. Present topography suggests the platform scarp was 5-6 m high. The 10-12 m high cliff to the river flat at the rear of the site needed no artificial defences.

Again using the 1950 aerial photograph, the single level occupation platform of Pukekuri appears to have been *ca.* 30 x 15 m, perhaps 400 m². There may have been some *rua* along the platform margin above the river flat.

N108/181 (445774)

A single ditch and bank defence formerly cut off a triangular piece of ground on the terrace edge above the left bank of Kaihihi River a little more than 2 km from the sea. The simple form of defence is markedly similar to that of N108/94, on the right bank of the river 1 km downstream. The defences of N108/181 are clearly visible in aerial photograph 1791/5 taken in May 1950. Since then, however, the ditch and bank, and presumably much of the defended area as well, have virtually been destroyed in bringing this part of the paddock under cultivation. The remains of the ditch can be seen at both ends where it meets the steep scarp to the river valley and, rarely, as a slight depression as it crosses the terrace between. The site is now under grass with four large rewarewa and a karaka on the defended area and boxthorn and macrocarpa on the rear terrace edge.



0 10 20 m

POTAHI

N108/84

Fig. 25. Plan and sections of Potahi (N108/84).

The triangular defended area was protected at the rear by an 8-10 m scarp to the river valley and across the front by a single 75 m long ditch and bank. To judge from remaining evidence, the ditch may have been quite massive. Outside it the ground rises slightly to the west.

The defended area of N108/181 was approximately 1600 m². Within the defences broken ground suggests damaged occupation evidence — this having some confirmation from the 1950 aerial photograph which has indications of earthworks under scattered trees near the rear scarp.

N108/94 (443785) Fig. 26

This defensive earthwork is above the right bank of Kaihihi River, 1.3 km from its mouth. The site is now under grass, and except for the ditch, which is still in good condition, the whole area has been cultivated. Some remnant native trees survive in the gully to the east and north of the defended area. The ditch is highly visible in the 1950 aerial photograph (1790/3; see Fig. 26).

The single ditch extends from a steep-sided tributary gully, 8-10 m deep and 30 m wide, across a terrace to the abrupt 10-12 m scarp to the bed of the Kaihihi River. The ditch is now 66 m long but may originally have been slightly longer: the ponding area for a tunnel which cuts through the terrace to the Kaihihi River bank (to provide 'head' for a hydraulic pump) has destroyed some part of the east end of the ditch. What appears to be an extension to the ditch continues for *ca.* 25 m at right angles to the main transverse ditch above the stream at the east margin of the site. Where this met the main ditch is now destroyed by excavation for the ponding area. The ditch is 7.5 m from rim to rim, and as much as 2.25 m deep. The cut section at the east end of the ditch reveals 1.5 m depth of fill, indicating that the original depth of the ditch was *ca.* 3.5 m. A very slight rim survives on top of the inner ditch scarp.

The ditch cuts the terrace as it dips slightly to the north. Within the defended area, the terrace continues to fall *ca.* 3-4 m in the initial 40 m behind the ditch. Otherwise the defended area is virtually level. The defended area is roughly rectangular measuring *ca.* 80 x 200 m (16,000 m²).

N108/137 (441788) Figs. 26, 27

The remains of N108/137 are situated on the left bank within a sharp bend of Kaihihi River, not quite 1 km from the sea. Immediately over the river to the north is the pa Orongomaihangī (N108/44) which was one of three pa on the Kaihihi River attacked by General Pratt and 1000 men in October 1860 (see Prickett 1981:68-72). Another of the Maori fortifications of 1860 is Mataiaio (N108/138), which was situated close to N108/137 (see Figs. 26, 27), with its escape ditch running south-east into the outer ditch of the earlier pa (and thence to the river valley). N108/137 can be seen in the 1950 aerial photograph (1790/3; see Fig. 26) still substantially intact although the outer ditch has been softened through cultivation. (Nearby Mataiaio, further out in the paddock, is already almost erased.) The greater part of the site is still intact under gorse and some trees. Since 1950 the two outer ditches have been filled in and most of the pa has come under the plough. The site is now under grass with dense bracken remaining on the innermost platforms and remnant native trees on the steep scarps to the river.



Fig. 26. Part of 1950 aerial photograph (1790/3) showing N108/94, N108/137 (with adjacent 1860 fortification Mataiaio, N108/138), Mounu Kahawai (N108/187) and Parawaha (N108/188).

Photo: NZ Aerial Mapping Ltd.

Natural defences consist of abrupt 12-15 m scarps to the bed of the Kaihihi River on the east and north-west sides of the triangular defended area. The easy approach from the extensive terrace to the west was barred by a series of ditches. The two outer ditches are now filled in but in both cases can be seen at their ends where they meet the scarp: they are respectively 100 m and 80 m long. A third ditch cuts the narrowing terrace 50 m from the second ditch, while a further two ditches cut the narrow point beyond the main inner platform. From present evidence the ditches appear to have been exceptionally wide (10-12 m) and deep. The remains of rim banks can be seen above surviving parts of the second and third ditches. Some use appears to have been made of water-rolled boulders from the nearby riverbed for revetting of scarps of which two small examples remain.

The defended area of N108/137 extends for *ca.* 200 m from the outer ditch to the point of defended land at the northern end of the site. At its widest the outer platform is 80 m across. The total defended area is *ca.* 10,000 m². This area includes five separate platforms which give an area excluding ditches of 5500-6000 m². Eight *rua* survive on the inner 800 m² platform, including five grouped together below a slight scarp at the north-east end. One other *rua* remains on the 3200 m² second platform.

Mounu Kahawai N108/187 (435792) Fig. 26

This historic pa occupies a position on the terrace above the left bank of the Kaihihi River mouth in much the same situation as N108/163 at the mouth of Katikara River. One kilometre north-west is the important fortification of Parawaha. In about 1818 Mounu Kahawai was taken by the raiding party known by the name of Murupaenga, the fighting chief of the Ngati Whatua of Kaipara (Smith 1910:283-292). Other tribes involved were the Ngapuhi, Ngati Toa, Ngati Tama and some sections of the Te Atiawa. Having taken Tataraimaka, 5 km north-east, the *taua* moved on to Mounu Kahawai. Smith (1910:288) quoted W.H. Skinner in his account of what happened. Mounu Kahawai "was of great size, with a large population, but was not a strong position, being built on comparatively flat ground. The invaders fired the dry raupo growing in the swamps (named Totoaro) around the *pa*, and under cover of the smoke and consequent confusion stormed the place with great slaughter." The raupo swamp was presumably in the gully of the Matanarara Stream, the eastern tributary of which skirts the pa. The site is now under grass having been cultivated many times. The remains of defensive works can be made out along the west and south sides.

As Skinner noted, and Murupaenga's *taua* turned to advantage, Mounu Kahawai occupies a position of little natural advantage. The extensive terrace taken up by the pa is *ca.* 15 m above the adjacent Kaihihi River and Matanarara Stream valleys and the sea beach to the north. The useful terrace scarps to river and sea beach do not compensate for the easy approaches elsewhere. Artificial defence can be made out on the 1950 aerial photograph (1790/3; see Fig. 26) and on the ground. Across the easy slope to the west there appears to have been a single massive ditch and bank 200 m in length, extending quite straight from the sea cliff south to the valley of Matanarara Stream. This defensive line then continues around the escarpment 4-5 m below the terrace edge for a total length of *ca.* 300 m before cutting 40 m across to the cliff to the Kaihihi River, and thus barring the easiest approach to the pa from nearby terrace country to the south-east.

No sign of internal organisation can be found on the now cultivated interior of Mounu Kahawai. The defended area may have been as much as 55,000 m².

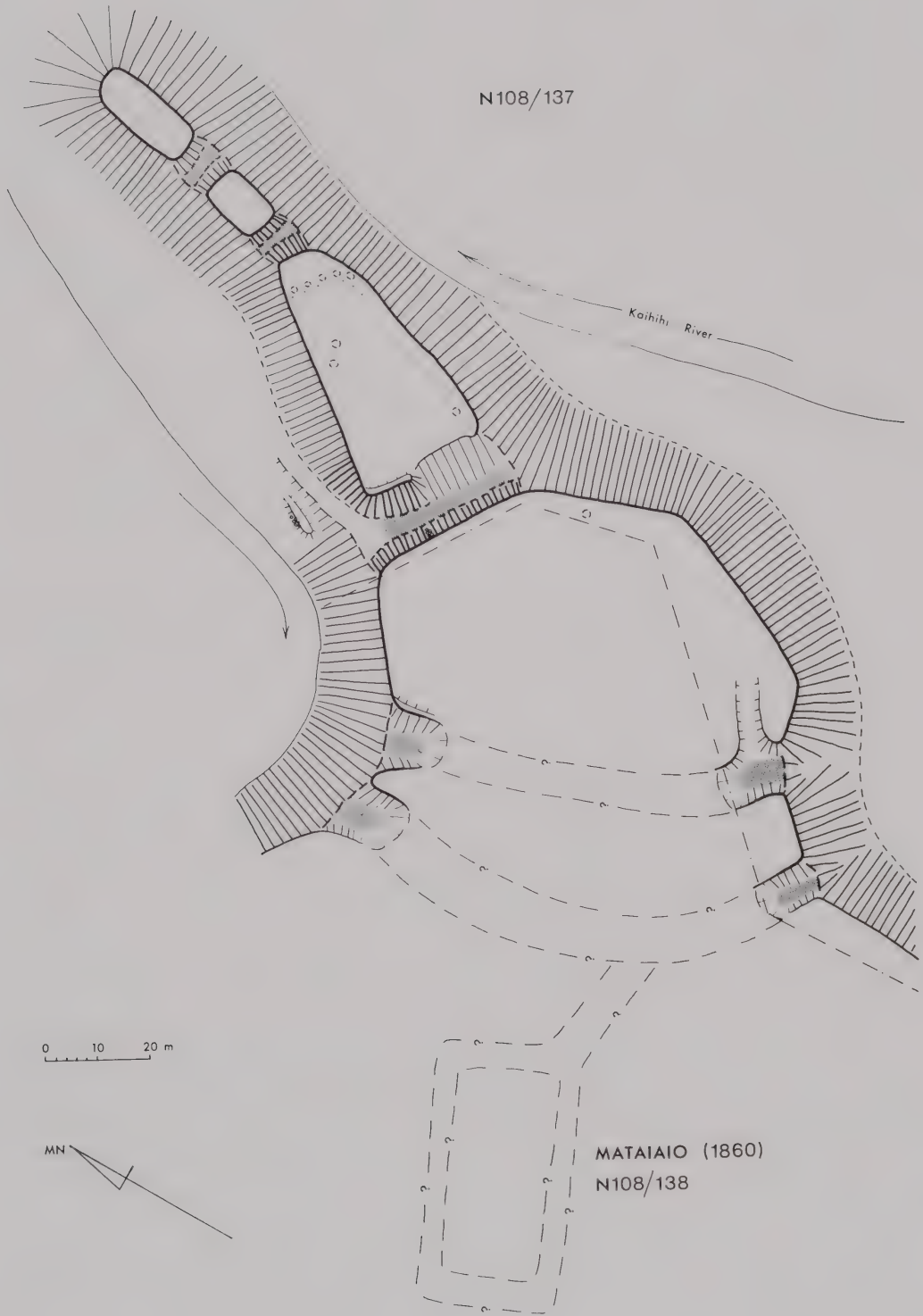


Fig. 27. Plan of N108/137.

N108/186 (422777)

A single massive ditch cuts off an area of terrace against the sea cliff on the left bank of Horomanga Stream. The site occupies a surprisingly commanding situation which gives good views over lower ground to Stoney River and beyond, as well as over the beach and sea below and the terrace country east. Five hundred metres south is N108/185, while 900 m north-east is the site of the historic Nga Mahanga *kainga* Whareatea (N108/93), also situated on the cliff edge above the beach. N108/186 has been ploughed many times and is now under grass. Surviving archaeological evidence includes the remains of the ditch, some dimples indicating *rua*, and charcoal and shell eroding from the terrace rim above the beach.

Natural defences include the steep 20 m scarp to the low flat behind the beach, and the gully of Horomanga Stream to the east. Artificial defences consist of a ditch and bank — now 8 m from the top of the inner bank to the counterscarp rim — which extends for *ca.* 250 m from the sea cliff to curve around towards the Horomanga Stream. These defences have been destroyed at the east end by the old coast road which crosses the gully at this point. The road continues across the defended area and cuts the defences again at the west end of the site.

There is no sign now of internal organisation within the defended area except for dimples indicating *rua* which seem to concentrate at the west end. The present landowner states that when the land was first ploughed the horses fell into many 'holes'. N108/186 is 200 x 80 m, giving a defended area of *ca.* 16,000 m².

N108/185 (420773)

N108/185 occupies an isolated lahar mound on the edge of terrace country overlooking the flood plain of the lower Stoney River. It also commands a useful view north to N108/186, 500 m away. The defensive ditch which cut the north side of the site was ploughed in during the 1940s and can be seen only with difficulty. It is barely visible in the 1950 aerial photograph (1791/3). The site is under grass.

Natural defences are strong. On the south side there is an abrupt 10-12 m scarp to the old flood plain. The top of the hill stands 5-6 m above the terrace to the north. The single (now destroyed) ditch cut the terrace behind the knoll.

Five or six terraces remain on the defended area which falls to the north. On a higher terrace there is a single *rua*. Spilling down the escarpment at the rear of the site is some fragmentary charcoal and shell. The defended area measures 40 x 20 m — *ca.* 500 m², although actual living space on the several small terraces is a good deal less than this.

DISCUSSION

Of the 27 fortifications recorded in the Okato district, eleven are of ring-ditch form. Another five make use of a scarp or cliff at one side with the other three sides defended by one or more ditch and bank. Other forms employ straight or angled ditches cutting off headlands or other sections of terrace country, on occasions making use of steep stream gullies which extend at right angles to the primary sea or river scarp. A fourth group has transverse ditches cutting spurs, with terrace and scarp or simple scarp defence down the

sides. Many sites, particularly those of ring-ditch form, take advantage of naturally defensible hills or mounds. At the south of the survey area three such mounds are volcanic in origin and are now cut by the narrow flood plains of Kaihihi (Potahi and Pukekuri) and Stoney Rivers (N108/185) respectively.

Ring-ditch pa mostly defend a single small platform. Simple ring-ditch defence, without additional transverse or other ditches, occurs at N108/87 (Fig. 20), N108/96 (Figs. 11, 13), N108/97 (Figs. 10, 11), N108/195 (Fig. 2) and probably N108/104 (Fig. 5) as well. Ring-ditch defence with additional transverse or other works is to be found at Pukekohe (Fig. 4), N108/190 (Fig. 22) and Puketi (Fig. 18), all of which have a second ditch covering a section of the approach. N108/193 (Fig. 21) has an additional transverse ditch at both ends, with a partial second outer ditch covering the more difficult approach up the spur. The remaining two ring-ditch works are more complex: each defends two platforms, with additional ditches either linking the separate ring-ditch defences (N108/88), or barring the easiest approach from nearby higher ground (N108/89; Fig. 19).

There is a varied group of pa which are sited to make use of a cliff or scarp on one side. Three of them (Potahi (Fig. 25), Pukekuri and N108/185) occupy lahar mounds on the edge of terrace country cut by low cliffs to river flood plains. These have had their natural advantage supplemented by one or two ditches which extend from scarp to scarp around the more vulnerable terrace side. N108/160 (Fig. 7) is a simple rectangular defence backed up against a steep scarp to the Katikara River; its form and situation suggest a mid-nineteenth century gunfighter position. N108/91 (Fig. 23) is a similar simple work making use of a scarp on one side, although in this case its situation and numerous *rua* mark it as a pre-European work. Parawaha (Figs. 16 and 17) is defended by sections of simple and complex ditch and bank earthworks on the landward side.

In addition to the partial ring-ditch works is a group of pa which employ ditch and bank defences to cut off what are frequently extensive areas of terrace. The artificial defences of these fortifications extend from what might be grouped with the partial ring-ditch pa, described above, to simple straight ditches which bar the approach to a headland. Among the former is Mounu Kahawai (Fig. 26) which relies on a single long ditch and bank, which makes some use of natural features as it works its way around a very extensive section of terrace on the south bank of the Kaihihi River mouth. Also on the coastal scarp between Stoney and Kaihihi Rivers is N108/186 which has a 250 m ditch and bank curving around two sides of an area which is otherwise defended by the seaward scarp and the steep-sided gully of Horomanga Stream. N108/94 (Fig. 26), N108/181 and N108/191 are defended by single slightly curved ditch and bank defences which cut across a terrace to isolate a piece of ground protected elsewhere by natural scarps to river bed or stream gully. N108/163 (Fig. 9) appears to have been defended by two ditches and banks.

The fourth group is of sites which employ transverse ditches to cut spurs and terrace and scarp defence along the flanks. N108/92 (Fig. 24) and N108/95 (Fig. 15) are small, simple fortifications in which transverse ditches serve to cut off a narrow section of an extensive terrace. N108/92 has terrace and scarp on one side and simple scarp defence on the other. The other two sites, N108/101 (Fig. 8) and N108/137 (Fig. 27), are more complex. They have four or five transverse ditches which cut a spur into several defensible platforms. N108/101 has simple scarp defence on the sides and at the down-spur end, while N108/137 again makes use of natural scarp defence on the flanks.

Pa of the Okato district vary greatly in size. At one end of the scale is Mounu Kahawai which defended an area estimated at 55,000 m², and at the other are N108/92, 104 and 160 of defended areas of only 180 m². Mounu Kahawai is much the largest pa of the entire survey region (New Plymouth to Stoney River). It is, however, only the outstanding example of a group of sites in the Okato district which employ similar defensive arrangements and which are all among the largest sites of the region — these are N108/163 (defending 10,000 m²), N108/94 (16,000 m²) and N108/186 (16,000 m²). In size they can be compared only with Kekeorangi (16,000 m²), a pa of similar form on the coastal cliff north of Oakura (Prickett 1980:28-30).

Within the Okato pa presented here there is sometimes useful evidence of internal organisation. N108/97 (Fig. 10) has its sloping platform divided into several terraces on most of which are *rua* for food storage with platforms for dwellings nearby. The uppermost platform, the *tihī*, has four *rua* tucked behind it adjacent to the defensive bank. Puketi (Fig. 18) has *rua* scattered throughout the platform and in places within the ditches. Other sites have their storage capacity at the platform margins (N108/91, Fig. 23), or the centre (N108/95, Fig. 15; and N108/193, Fig. 21). The surviving platform of N108/89 (Fig. 19) has *rua* regularly placed near the platform rim. At other sites *rua* often show some evidence of grouping within the platform area (as, for example, N108/92, Fig. 24; and Potahi, Fig. 25). Parawaha (Fig. 16) has evidence of both *rua* and house platforms. The largest sites of the district have, because of their terrace situation, suffered greatly from cultivation over the years — it is difficult in these cases to say anything about internal arrangements.

Pa of the present survey area occupy a variety of topographic situations. Some make use of hilltops to give command over surrounding countryside. Pukekohe (see Fig. 3) is the best example of these; others are N108/88, N108/96 and, to an extent, Puketi as well. Mostly, however, it is the immediate topographic advantage which is important and not the more distant view. Hence, most sites occupy situations which allow some natural defence or advantage even if higher ground is close at hand. Thus the strongly defended N108/193 is overlooked by nearby higher ground across gullies on both flanks. Similarly, N108/95 and N108/190 are examples of positions which have only a restricted view of the surrounding area. N108/87 on the other hand, and probably N108/97 as well, although possessing little command themselves over surrounding countryside, were probably occupied in conjunction with the nearby hilltop sites of N108/88 and N108/96 respectively.

Mention has already been made of the small group of very large sites which occupy vulnerable terrace edge situations. The similar scale of these fortifications, their like situations and their comparatively weak defences suggest a degree of contemporaneity and some similarity of function. If the sizes of pa are taken as some indication of population numbers then these large sites gave protection to considerable numbers of people. In the case of Mounu Kahawai the perimeter of 800-1000 m would have required a large number of fighting men to effectively man the defences. It may on the other hand be argued that the fact that Mounu Kahawai was taken demonstrates that the number of defenders was insufficient for the task.

The types of fortification employed about the lower Kaihihi and Hangatahua Rivers illustrates nicely the degree to which landform relates to pa form. Beyond the numerous gully edge situations and rounded hills of most of the surveyed region, the lower terrace

country and occasional lahar of the Pungarehu and Warea Formations offer a limited range of naturally advantageous positions. Hence, in the changed landscape south and west of Kaihihi River are only the large terrace edge pa with their simple linear defensive works and the three sites which occupy lahar backed against abrupt scarps to narrow flood plains. South of Stoney River the landscape is substantially the same although many more lahar lend themselves to a great many fortifications mostly of ring-ditch form which make use of these natural situations. As far as Warea this land too belonged to the Nga Mahanga people. The present study, however, depends for its coherence on the uniformity of landscape forms, regional geographic situation and the essential continuity of historical occupation. The Kaihihi-Hangatahua River landscape is a foretaste of a markedly different archaeological landscape to the south which awaits description at some future date.

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